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Report to Congress on an Economic Analysis of Gross Income Taxes

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Report to Congress
on an

Economic Analysis of Gross Income Taxes

Department of the Treasury
Office of the Secretary
Office of Tax Analysis
November 1986

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THE SECRETARY OF THE TREASURY
WASHINGTON

November 12, 1986

Dear Mr. Chairman:

Section 1081 of the Deficit Reduction Act of 1984, P.L. 98-369, requires that the Secretary of the Treasury or his delegate shall conduct a study of, and submit to the House Ways and Means Committee and the Senate Finance Committee, a report on "a simplified income tax based on gross income." The study and report are to consider the advisability of replacing the Federal individual income tax and the corporate income tax with a gross income tax. Pursuant to that requirement, I am submitting the attached report.

I am sending a similar letter to Chairman Packwood of the Senate Finance Committee.

Sincerely,

James A Baker III

James A. Baker, III

The Honorable Dan Rostenkowski
Chairman
Committee on Ways and Means
House of Representatives
Washington, D.C. 20515

Enclosure

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The Honorable Bob Packwood
Chairman
Committee on Finance
United States Senate
Washington, D.C. 20510

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T: ECONOMIC ANALYSIS OF GROSS INCOME TAXES

U.S Treasury Department

Office of the Secretary
Office of Tax Analysis

November 1986

This report was prepared for the United States Department of the Treasury by Charles L. Ballard and Ronald C. Fisher. Department of Economics. Michigan State University. under Contract No. OS-85-980.

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Chapter I

INTRODUCTION AND CONCLUSIONS

A. Purpose

Section 1081 of the Deficit Reduction Act of 1984, P.L. 98-369, requires that the Secretary of the Treasury or his delegate shall conduct a study of, and submit to the House Ways and Means Committee and the Senate Finance Committee a report on, "a simplified income tax based on gross income". The study and report are to consider the advisability of replacing the Federal individual income tax and corporate income tax with a gross income tax. The study is to include analysis of the expected economic effects of such a tax substitution on horizontal and vertical tax equity, on economic efficiency including effects on productivity and investment, and on the administrative costs of the tax system.

This report was prepared in response to the Congressional mandate. The study follows a four step approach:

1. An examination of the potential methods of imposing and alternative structural features of gross income taxes and the acknowledged theoretical effects of those alternative structures.

2. A review of past and present experience with gross income and gross receipts taxes in other nations and among subnational governments in the United States, including any results of specific research on the effects of those taxes.

3. An analysis of the expected distributional and efficiency effects of adoption of specific, revenue neutral gross income taxes in place of the current tax structure.

4. A review of expert opinions of this type of tax structure.

B. Findings and Conclusions

In preparing this report, the Treasury Department is responding to the statutory mandate in the Deficit Reduction Act of 1984. The Treasury Department does not favor or support a Federal gross income tax. The report's findings and conclusions are as follows:

1. When a pure gross receipts tax, with no deductions at all, is imposed at the business level, very serious economic distortions result. The tax "pyramids" or "cascades" through the production process, leading to a pattern of effective taxes that is arbitrary, capricious, and difficult to calculate. Because taxes can be reduced by limiting the number of transactions in the production process, a strong incentive for vertical integration is created. Just as important for the current debate is the fact that all of these effects will persist even if deductions are allowed for the cost of goods sold. This is because purchases of materials are only one component of cost, and any taxation of capital goods will continue to contribute to cascading of the tax.

2. Because of the problems with gross income taxes, there are very substantial pressures to adopt differentiated rate structures, with higher rates for some firms or industries than for others. This report presents evidence of this by reviewing the experience of Hawaii, Washington, and West Virginia, which have used taxes of this type. All have differentiated rates, which lead to further problems of economic distortion and administrative complexity.

3. Substitution of a gross income tax for the current net income taxes would not reduce administrative problems arising from the definition or measurement of income, a difficulty present under any type of income tax. These difficulties are particularly severe for financial institutions, government, agriculture, and housing. Because more firms and individuals could be subject to any gross income tax than currently pay net income taxes, the administrative problems of income measurement under a gross income tax may be greater, at least in number, than under the current tax structure.

4. Policymakers may wish to exclude some commodities or economic sectors from taxation under a gross income tax in order to reduce the regressivity of the tax or to promote exports or for administrative reasons. The only possibility of removing the entire tax burden on a particular commodity is to exempt the final sale of the commodity from tax and provide the seller a credit or rebate for all tax collected at prior stages of production and distribution. But this method is unworkable precisely because it is difficult to determine and impossible to generalize the amount of tax collected at those prior stages. This problem of determining proper rebates for exports was a primary reason why the European nations repealed various types of gross income or gross receipts taxes and adopted consumption-type value-added taxes.

5. Some proposals for gross income taxes calculate their required tax rates on the assumption that all of gross national product would in fact be taxed, or a multiple of gross national product in the case of a tax that applies to all sales, intermediate as well as final. All experience, however, suggests that there will be exclusions from the tax base. Among the goods and activities that are most often not taxed are government, private charitable organizations, housing, various services, in-kind or imputed income, and exports. In addition, under the European value-added taxes and the sales taxes in the United States, food, medicine, and other "necessities", are often exempted or lightly taxed in an attempt to reduce the regressivity of these taxes. When these erosions of the tax base occur, the tax rate necessary to raise any desired level of revenue must increase. This increases any distortions associated with the tax.

The lowest feasible gross income tax rate that would generate the same revenue as the current Federal income taxes is about 6.7 percent, that applying if all types of personal income are taxed and only government and nonprofit organizations are exempt from the business gross income tax. If even a few additional exemptions are allowed, for food, housing, medical care, and exports for example, the required rate rises to about 9.4 percent. The relevant rate would be applied both to individual gross income and to business gross income, so the effective rate for any individual would be much greater than the nominal rates noted above.

6. Even with some of the rate differentiation that is designed to alleviate regressivity, gross business taxes are almost always regressive. In addition, the efficiency cost of adjusting the rate structure in an attempt to reduce regressivity is significant.

7. If a true gross income tax were applied at the personal level, it would involve the removal of personal exemptions and the zero bracket amount. This would inevitably result in a substantial increase in the tax burden on the poor. If a pure gross income tax were instituted, it would involve a large shift in tax burdens toward a more regressive system.

8. The overall effect of a gross income tax with rates in the range of 6 to 12 percent would be to raise the effective marginal tax rate on capital in the economy. If the national government gross income tax rates are 12 percent, the overall effective marginal tax rate on capital is 37.1 percent compared to 26.3 percent under current law, an increase of about 41 percent. Thus a gross income tax would be a disincentive to investment compared to the current tax structure. The most important feature of a gross income tax which leads to reduced investment incentives is the absence of depreciation deductions.

C. Other Views

Economists and other tax analysts are often said to have widely varying opinions of the desirability of the same tax feature or structure. But that notion of disagreement is dispelled by the commonality of negative opinion on gross income taxes. The breadth of that agreement is illustrated both by the results of the analyses of past and present gross income taxes reported in Chapter IV and by the two representative opinions quoted below:

> To begin with, the turnover tax which applies to the total of transactions may be eliminated as least desirable....A turnover tax...imposes arbitrary discrimination against products which involve many stages of production and distribution. Moreover, in order to avoid tax, firms will attempt to join with their suppliers, thus encouraging vertical integration and reducing competition.
>
> ...a tax on gross income, i.e., an income tax which does not allow for depreciation,...would be objectionable on both equity and efficiency grounds. With regard to equity, it would offend the basic dictum of income taxation which says that income from all sources should be taxed fully, but on a net basis. With regard to efficiency, it would compound the discrimination against saving which even a tax on net income involves. (Musgrave and Musgrave, 1984, pp.434-436).

Or, in the words of another commentator:

> The advantage of a turnover tax is that any particular revenue goal can be realized at the lowest possible rate...but it is highly objectionable on other grounds. A turnover tax levied at a uniform rate results in widely varying total rates of tax on different goods, depending on the complexity of the production and distribution channels.
>
> Even the uniform rate turns out to be will-o'-the-wisp whenever the turnover tax is tried. The discriminatory effects of the uniform rate soon become very serious...and the tax becomes a maze of complications and irrational distinctions. Thus a tax that was originally intended to be relatively simple turns out to be an administrative monstrosity and highly inequitable. (Pechman, 1983, p.194).

Chapter II

THE GROSS INCOME TAX AND ALTERNATIVES DEFINED

In its purest sense, a gross income tax is a tax on the total income or total receipts of an individual, household, or business with no exclusions or deductions. But, as discussed in more detail below, the term gross income tax is sometimes used to refer to a set of taxes, usually collected from businesses, all of which utilize fewer deductions than the more common net income or profits tax. Each of these so-called gross income taxes can have substantially different distributional and efficiency implications. Therefore, this report begins with a description of the range of potential "income" taxes, starting with a pure gross income tax and finishing with the more traditional net income tax.

A gross income tax may be collected from individuals/households or businesses or both. It is a fundamental point that the choice of collection agent may be irrelevant on equity or efficiency grounds because of the equivalence of various types of household and business taxes. When gross income taxes have been used, however, both by some state governments in the United States and by several European nations, they have almost always been collected from businesses. For that reason, and because the ultimate economic impact of taxes collected from businesses may be hidden, more emphasis will be given to describing business gross income taxes.

A. Alternative Business Tax Bases

1. Gross Receipts Tax

The most broadly based tax collected from business is a tax on the total receipts or total revenue of every firm. No deductions for any type of expenses would be allowed. As shown in Table 2.1, because for every firm revenue is, by definition, equal to costs plus profits, such a gross receipts tax is the same as a tax on both profits and all types of costs (materials and supplies, labor, depreciation, interest, and rent). If this type of gross receipts tax were applied to all firms, the total tax base for the economy would be a multiple of gross national product (GNP), which is the total value of all final goods and services produced in the economy in a given year. The base is greater than GNP because the tax applies to all business sales, including interbusiness sales, and those taxes then enter into the base for sales at later stages of production and distribution.

It is common, however, that when gross receipts taxes are used, sales of some commodities or sales by some types of firms will be exempt from tax. For example, government and nonprofit entities are almost always tax-exempt. In that case, the aggregate base of a gross receipts tax would be smaller and could even be less than GNP.

2. Value-Added Taxes

Value added by a business is, in general, the difference between the sales of a firm and the cost of goods or services purchased from other firms which went into production of the good or service produced or provided by the business. A simple example, outlined below, illustrates the value added concept.

VALUE ADDED ILLUSTRATION

Business:	Bakery	
Costs:	Materials	- Flour, Sugar, Spices, Utilities
	Labor	- Baker, Sales Clerk
	Capital	- Mixer, Utensils, Oven
	Credit	- Interest Paid on Loans
	Space	- Building Rent

Revenue = Purchases of Materials + Wages + Depreciation
+ Interest + Rent + Profit

Value Added = Revenue - Purchases of Materials
= Wages + Depreciation + Interest + Rent + Profit

The value added by the bakery is the difference between the sales value of the bakery's products and the value of the materials purchased in producing those products. As the illustration makes clear, there are two alternative but equivalent ways of calculating value added. One alternative is simply to subtract materials costs from sales. The other alternative is to add labor costs plus depreciation plus interest paid plus rent plus profit.

Three variants of the value-added tax (VAT) concept arise from different methods of treating capital goods purchases. If no subtraction or deduction is allowed for capital expenditures or capital depreciation, then the tax is a gross income-type VAT. Again as shown in Table 2.1, a gross income VAT is equivalent to a tax on the sum of wages plus interest plus rent plus depreciation plus profit. If all business entities were taxed, the aggregate base of the tax would be gross national product. In some usages, this type of tax is also called a "gross income tax" because the base allows deductions only for the materials which are used in producing the product.

If depreciation deductions are allowed, then the tax is a net income-type VAT, with the base for the firm equal to wages plus interest plus rent plus profit and the aggregate base equal to national income (consumption plus net investment). In this case, deductions are allowed not only for the materials used in production but also for the capital goods "used-up" in production, that is, for the depreciation of capital goods during the production period. Because the aggregate base of this type of tax is national income, it is equivalent to a national personal income tax.

The final value-added tax variant is called a consumption-type VAT. In this case, all capital expenditures are subtracted from revenue in addition to purchases of materials. The base of this tax is wages plus interest plus rent plus profit less net investment, which is equal to total consumption in a national accounting sense. In essence, capital income to individuals is not taxed unless consumed. Because the aggregate base of this tax is national consumption, it is equivalent to a national retail sales tax or a personal consumption tax.

3. Net Income Tax

For comparison, Table 2.1 also shows the base for the traditional net income or profits tax. Under that structure a business may deduct most all business expenses, including costs for materials, labor, interest, rent, as well as depreciation of capital equipment. The resulting tax base equals the return on investment to the business or profits. No deductions are allowed for dividend payments out of profits to shareholders, so the business net income tax is independent of whether profits are distributed.[1]

B. Personal Tax Bases

A gross income tax can also be collected directly from individuals or households. Similar to the above, such a pure gross income tax would be a tax on total income, regardless of source, with no exemptions or deductions. Any selected rate structure could then be applied to that gross income base to determine tax liability. While it is sometimes assumed that a gross income tax would utilize a single, flat rate, that is certainly not necessary. The major difference between a gross and net income tax is in the definition of the base, not in the rate structure.

If a pure gross income tax (all income, no exemptions or deductions) is coupled with a single rate, then the tax could be administered as a withholding tax from all income sources. Theoretically, individual filings in such a tax structure would not be required.

The determination of the base of a personal gross income tax would not be free from controversy. A number of difficult issues would have to be resolved. One issue is whether income received in-kind, such as employer-provided insurance or food stamps, would be included in the tax base. Under a pure gross income tax, one might expect nonmonetary income to be taxed as well. Of course the question of the appropriate definition of income also occurs regarding net income taxes.

A second structural issue concerns the treatment of negative income or losses and the costs of earning income. Presumably, even in a gross income tax, negative income should be included, which is another way of saying that losses should be deductible. These might include capital losses or losses from business enterprises. To calculate business losses requires, of course, deductions for the costs of earning income. To resolve this issue it may be necessary to consider what, if any, business tax would be coupled with the personal gross income tax.

A third issue concerns the choice of taxpaying unit, whether the individual or the household, and any accompanying personal exemptions to differentiate households by size. Obviously this issue is more important if the tax is to be levied on households with a graduated rate structure.

The possibility of allowing a standard deduction per return as an administrative device to reduce collection costs by effectively exempting taxpayers with very small tax liabilities is a potential fourth issue. Such a standard deduction would also introduce a degree of progressivity into the tax system even in the absence of any graduation in tax rates.

1/ Because capital gains are not taxed until realized, and then traditionally at a lower personal income tax rate than dividends, the combination of the business and personal income taxes is expected to favor retained earnings over dividends.

The resolution of these and other structural questions determines the administrative system required to collect a personal gross income tax. With no deductions for losses and no personal exemptions, the tax could be withheld at the source of income, as noted above. On the other hand, if some personal adjustments are allowed, then personal taxpayer filing becomes required, with the administration and compliance cost partly dependent on the number of taxpayers.

C. Comparison of Tax Bases

From the above descriptions it should be clear that identical tax bases can be achieved by taxes collected either from businesses or individuals. Specifically, the base of a gross income-type value-added tax collected from business is equivalent to that of a gross income tax with no depreciation deductions collected from individuals, with both bases equal to gross national product. Also, the base of a net income-type value-added tax is equivalent to the base under a personal income tax with depreciation deductions, while the base of a consumption-type value-added tax collected from business is equivalent to that of a retail sales tax collected from consumers.

These tax equivalences are demonstrated as follows:[2]

GNP = C + I + G + E
where GNP = Gross National Product
C = Private Consumption Spending
I = Gross Investment
G = Government Purchases of Goods and Services
E = Net Exports = Exports - Imports

Thus gross national product is equal to the sum of the value of all final products (and services) produced in the nation. Note that products produced by one business and sold to another (intermediate goods) are not added in calculating GNP, because the value of all intermediate goods is reflected in the value of the final consumption goods or services and investment goods produced with those intermediate products.

Because value added is equal to a business's revenue less purchases of all goods and services from other firms, that is, purchases of intermediate goods, Baumol and Blinder (1979, p.322) note that "GNP can be measured as the sum of the value added by all firms". Recalling that for every firm,

Revenue = Purchases of Materials from other firms + Wages + Depreciation + Interest + Rent + Profit, then
Value Added = Wages + Depreciation + Interest + Rent + Profit.

It follows that GNP equals the sum of value added or GNP = Wages + Depreciation + Interest + Rent + Profit.

The bases of the several value-added taxes collected from business and alternative personal taxes can now be compared. The base of a gross income-type VAT is revenue minus purchases of noncapital intermediate goods, which also equals wages plus depreciation plus interest plus rent plus profits, which, as shown above, equals consumption plus investment plus government purchases plus net exports or GNP.

---

[2] GNP also includes indirect business taxes, which are ignored here.

Similarly, the base of a net income-type VAT is revenue minus purchases of noncapital intermediate goods minus depreciation, which equals wages plus interest plus rent plus profit, which also equals consumption plus government purchases plus net exports plus net investment (gross investment minus depreciation) or national income. In other words, as noted previously, a net income-type value-added tax collected from businesses has an identical base to a personal income tax with depreciation deductions.

As one progresses from a larger to smaller tax base, higher tax rates are necessary to generate equal revenue. In this hierarchy of taxes collected from businesses, the largest base results from a business gross receipts tax, followed in order by a gross income-type VAT, a net income-type VAT, a consumption-type VAT, and lastly a net income or profits tax.

When one of these business taxes is combined with some type of personal income tax, double taxation of some types of income will occur. For example, if a gross income-type VAT collected from business is combined with a personal gross income tax (no exclusions or deductions whatsoever), then effectively GNP is taxed twice, once at the rate of the business tax and once at the personal rate. If a net income-type VAT is combined with a personal income tax with a depreciation deduction, then national income is taxed twice.

It is common, however, for certain types of economic activities to be exempt (or taxed at lower rates) from these types of business taxes, which can alter the equivalence between certain business and personal taxes. For instance, suppose that government is exempt from a value-added tax. If it is a gross income-type VAT, then the base would be GNP minus government purchases of goods and services, which equals consumption plus investment plus net exports.3/ In an income sense, this base would equal total income (including depreciation) excluding all factor payments with respect to those goods and services purchased by government. Such a base would be equivalent to a gross personal income tax which excluded income payments, including wages, interest, and rent made by government and by the producers of the goods and services purchased by government. Therefore, although business and personal tax bases may be theoretically and ideally equivalent, they may not be equivalent in practice.

3/ This assumes that government purchases are zero-rated. Alternatively, government could be exempt on its own factor payments only. In that case, tax would be paid by producers of goods and services sold to government.

Table 2.1

Alternative Business Tax Bases

Type	Subtraction Base	Additive Base	Tax Base
Gross Receipts	Revenue	Purchases of Materials + Wages + Depreciation + Interest + Rent + Profits	a*GNP. a > 1
Value Added. Gross Income	Revenue - Purchases of Materials	Wages + Depreciation + Interest + Rent + Profits	GNP
Value Added. Net Income	Revenue - Purchases of Materials - Depreciation	Wages + Interest + Rent + Profits	National Income
Value Added. Consumption	Revenue - Purchases of Materials - Capital Purchases	Wages + Interest + Rent + Profits - Net Investment	Consumption
Net Income or "Profits"	Revenue - Purchases of Materials - Wages - Interest - Rent - Depreciation	Profits	Profits or Return on Investment

Chapter III

INDUSTRY STRUCTURE IMPLICATIONS OF GROSS INCOME TAXES

The aggregate burden generated by a business gross income tax of either the gross receipts or gross income value added variety depends on the degree of vertical integration in any industry. This occurs because sales of all intermediate goods are taxed by a gross receipts tax, while sales of intermediate capital goods are taxed by a gross income-type value-added tax. To the extent that a firm integrates backward into the production of those intermediate goods and thus reduces the number of sales transactions in the production of a product, aggregate liability from any given tax rate can be reduced.

This factor underlies the three most fundamental criticisms of gross income taxes, which are:

1. The effective tax rate will be greater than the nominal tax rate, the difference depending on the number of stages of production:

2. The effective rate will arbitrarily vary between economic sectors, depending on the number of stages of production: and

3. The tax creates an incentive for vertical integration to reduce taxes.

These fundamental problems are illustrated with the following detailed numerical example.

A. The Gross Income Tax Example

The example outlined in Table 3.1 continues the bakery case from Chapter II. A bakery purchases flour from a miller, who has purchased grain from a farmer. The bakery also purchases an oven, the only capital good in the example, from the oven manufacturer, who has purchased steel from a separate steel producer. Other capital goods or material inputs that might realistically be required have been suppressed to simplify the example.

The bakery's revenue or retail sales are $2,000, which equals total consumption in this simple economy. The oven producer's sales are $500, which represents production of a capital good which is called investment. Thus, gross national product in this economy (which equals consumption plus investment) is $2,500. In addition, as shown in Table 3.1, the farmer makes $100 of sales to the miller, who makes $500 of sales to the baker, while a steel producer makes $200 of sales to the oven manufacturer.

The base of a gross receipts tax is the total sales of all firms, which equals $3,300 in the example, so that a 10 percent gross receipts tax generates $330 of revenue. In this case the base of the gross receipts tax is 132 percent of GNP ($3,300/$2,500).

A gross receipts tax is often called a cascading or multistage turnover tax, because tax is levied on each transaction and that tax "cascades" down into the price charged at the next production stage, on which tax is also levied. In that way, the tax is said to "pyramid" through the various stages of production, ending up larger than the single nominal rate might suggest.

The base of a gross income value-added tax is total sales minus purchases of materials from other firms, which equals GNP, or $2,500 in the example. A 10 percent gross income VAT generates $250 of revenue, while a rate of 13.2 percent would be required to equal the gross receipts tax revenue.

Table 3.1 also depicts the bases and revenue from both net income and consumption-type VATs, although these are really of interest only for comparison, because they are not gross income taxes. The net income VAT is based on sales minus purchases of materials and depreciation, and generates $240 of revenue at a 10 percent rate (assuming straight-line depreciation over a 5-year life for the oven). The consumption-type VAT is based on sales minus purchases of materials and capital goods and provides $200 of revenue at 10 percent. Note that the consumption-type VAT generates revenue equal to a retail sales tax levied at the same 10 percent rate. The only retail sales in the example are by the bakery, equal to $2,000.

B. Gross Receipts Taxes and Vertical Integration

With a gross receipts tax, vertical integration among any of the firms in the example will reduce total tax liability. For illustration, the effect of integration between the miller and baker is shown in the top part of Table 3.2. The baker now purchases the $100 of flour directly from the farmer as well as the $500 oven from the oven manufacturer. The baker's sales remain at $2,000, because the market value of the baker's bread to consumers is not changed because of the merger. As a result, the gross receipts of all firms together is $2,800 so that a 10 percent gross receipts tax now would generate only $280 compared to $330 before the merger.

It is important to recognize that the merger has not changed any of the real economic conditions of this economy. Gross national product remains the same at $2,500, with retail sales still equal to $2,000. The merger has simply eliminated one separate interbusiness sales transaction with the effect of reducing overall gross receipts taxes. Indeed, if the baker were to fully integrate and merge with the farmer, steel producer and oven producer, total gross receipts, and thus the gross receipts tax base, could be reduced to $2,000, equal to retail sales.

The incentive for vertical integration caused by the gross receipts tax is obvious. Because there is no economic reason for the vertical integration (except tax avoidance), those mergers could in fact reduce GNP if the integrated firm was less efficient. That could occur, for example, if the large integrated firm was more expensive to manage.

Because the overall tax liability depends on the number of sales transactions, a gross receipts tax may not be neutral between different industries or even between different firms in the same industry. Continuing the example, the production of a loaf of bread by a fully integrated baker would generate less tax revenue than the production of an identical loaf by a nonintegrated baker. The lower total cost for the integrated firm provides the opportunity for both lower consumer prices and higher profits by the more integrated firms. Similarly, more integrated industries or industries with fewer production stages are favored by a gross receipts tax.

For that reason, the single nominal tax rate envisioned by gross income tax proponents is largely an illusion. The effective rate borne by a firm or business sector (relative to retail sales) will be greater than the nominal rate if the industry has more than one production stage. In the example, the 10 percent gross receipts tax is equivalent to a 16.5 percent retail sales tax with no integration, but only a 14 percent sales tax if the miller and baker are merged. As a result, when gross receipts taxes are actually used, a set of industry-specific rates is the norm, rather than a single rate, as a way of attempting to equalize tax burden between sectors.

C. Gross Income VATs and Vertical Integration

With a gross income-type value-added tax, integration between any firm and a capital goods producer will reduce taxes and alter effective rates in the same way as described for the gross receipts tax above. This occurs because firms are allowed a deduction for material purchases in a gross income VAT, but not for capital purchases. The bottom part of Table 3.2 depicts the situation if the baker integrates with the oven manufacturer, the only capital good producer in the example. The retail sales of the baker remain at $2,000 as before, while the baker purchases $500 of flour from the miller and $200 of steel from the steel producer. Because value added equals sales minus purchases of materials from other firms, the baker's value added is now only $1,300 compared to $1,500 in the nonintegrated case, while the oven producer's $300 of value added has disappeared. A 10 percent gross income VAT now generates $200 of revenue, compared to $250 in the nonintegrated economy.

With a gross income VAT, the tax paid by capital producers "cascades" down through later production stages, the degree of pyramiding depending on the number of capital good transactions. The merger of the baker and oven manufacturer means that there are no interbusiness sales of capital goods in this hypothetical economy, so that the gross income VAT has been transformed into a retail sales tax by the merger.

As was the case with gross receipts taxes, gross income value-added taxes create an incentive for mergers solely to avoid taxes, impose higher effective tax rates on products industries with more separate capital producers and capital good transactions, and have higher aggregate effective rates on consumers than are suggested by the nominal rate applied to the retail sale.

Table 3.1

Tax Bases and Production Stages

	Farmer	Miller	Baker	Oven Producer	Steel Producer	Total
Sales	$100	$500	$2.000	$500	$200	$3.300
Purchases of Materials	0	100	500	200	0	800
Purchases of Capital Goods	0	0	500	0	0	500
Gross Receipts Tax @ 10%	10	50	200	50	20	330
Value Added. Gross Income	100	400	1500	300	200	2.500
Gross Income VAT @ 10%	10	40	150	30	20	250
Depreciation	0	0	100	0	0	100
Value Added. Net Income	100	400	1400	300	200	2.400
Net Income VAT @ 10%	10	40	140	30	20	240
Value Added. Consumption	100	400	1.000	300	200	2.000
Consumption VAT @ 10%	10	40	100	30	20	200

Value Added. Gross Income = Sales - Material Purchases

Value Added. Net Income = Sales - Material Purchases - Depreciation

Value Added. Consumption = Sales - Material Purchases - Capital Purchases

Table 3.2

Tax Implications of Integration

1. Baker Integrates with Miller

	Farmer	Baker	Oven Producer	Steel Producer	Total
Sales	$100	$2,000	$500	$200	$2,800
Purchases of Materials	0	100	200	0	300
Purchases of Capital Goods	0	500	0	0	500
Value Added. Gross Income	100	1,900	300	200	2,500
Gross Receipts Tax @ 10%	10	200	50	20	280

2. Baker Integrates with Oven Producer

	Farmer	Miller	Baker	Steel Producer	Total
Sales	$100	$500	$2,000	$200	$2,800
Purchases of Materials	0	100	700	0	400
Purchases of Capital Goods	0	0	0	0	0
Value Added. Gross Income	100	400	1,300	200	2,000
Gross Income VAT @ 10%	10	40	130	20	200

Chapter IV

EXPERIENCE WITH GROSS INCOME AND VALUE-ADDED TAXES

Although the Federal Government in the United States has generally not used gross receipts or gross income taxes, these types of taxes have been used by other industrialized nations and by state and local governments in the United States. Tables 4.1 and 4.2 gives a list of the major gross income taxes currently or recently used by those governments. The European nations have all substituted a consumption-type value-added tax for their previous gross receipts taxes, so their experience with the gross receipts type of tax and reasons for change illustrate the problems with the gross receipts format.

In the three state governments which continue to use a broadly applied gross receipts tax (Hawaii, Washington, and West Virginia), consideration was recently or is currently being given to replacing those gross receipts taxes. Consequently, recent analyses are available that describe the economic effects of those state gross income taxes.

A. State and Local Gross Receipts Taxes in the United States

1. Hawaii

Hawaii's General Excise Tax (GET) is a combination gross receipts tax on all businesses and retail sales tax. Administratively, a rate of 4 percent is collected on all "final" sales, which include retail sales of goods and services (including medical and professional services) as well as intermediate sales of goods and services not used in production, and a rate of 0.5 percent is collected on nonretail sales of goods. Economically, this is equivalent to a 0.5 percent gross receipts tax on all businesses (including retail) and a very broad-based 3.5 percent general sales tax. The nonretail component of the GET provided slightly more than 25 percent of state tax revenue in Hawaii in 1984. Hawaii uses, in addition, both a personal income tax and a corporate net income tax.

Because the Hawaiian GET is a cascading turnover tax as described in Chapter III, it suffers from the standard problems discussed above. The recent Hawaii Tax Review Commission noted these in its report to the legislature:

> There are cases of tax pyramiding due to the fact that many intermediate business transactions are taxed at 4%. In addition, the general excise tax is levied on gross receipts from inter-affiliate transactions thus creating some incentives for integration of business. Finally, the existence of a preferential rate for certain gross receipts creates inequities among essentially equal taxpayers. For example, receipts from some intermediate business services are taxed at 1/2% while others are taxed at 4%. Still other gross receipts, because of exemption, are not taxed at all. (Report of the First Tax Review Commission, 1984, p.8).

If one views the Hawaiian general excise tax as a standard state general sales tax at a 4 percent rate, the actual effective rate paid by Hawaiian consumers will be greater than 4 percent because intermediate sales of goods and services are also taxed at either 0.5 or 4 percent. In a consultant report to the Tax Review Commission, Billings (1984) estimates that pyramiding and taxation of intermediate sales increases the effective rate from the nominal 4 percent rate to an effective rate between 4.79 percent and 5.42 percent, an increase of about 25 percent. The Commission Report stated that "the 4% retail rate is actually about a 5% rate, on average, when the pre-retail general excise tax imbedded in the price is considered" (Report of the First Tax Review Commission, 1984, p.8).

It is also important to understand how the rate structure discriminates against certain commodities. Services sold from one business to another and used in production (computer design or data management, for example) are taxed at the 4 percent rate while goods sold from one business to another to be used in production are taxed at the lower 0.5 percent rate. Therefore the ultimate tax burden borne by consumers of products which require a large amount of services in production will be greater than the tax burden of consumers who buy products which require more goods used in production. Moreover, the differential taxation of business purchases of goods and services provides an incentive to substitute goods for services in the production process whenever possible. For instance, a firm would be better off for tax purposes to buy computer equipment rather than computer processing services even though using the specialized computer service firm might be more efficient.

Another well-known problem with business gross income taxes is the incentive for vertical integration. Billings (1984) examined the magnitude and effect of this incentive in Hawaii by comparing the degree of vertical integration in Hawaii to that in other states which utilize a single-stage retail sales tax. Billings's method, which makes use of a common measure of integration, is to compare ratios of value added to sales for specific industries across states. The greater the ratio of value added to sales, the greater the degree of integration.

Using data for 1967, 1972, and 1977, Billings reports statistically significant higher levels of integration in manufacturing industries in Hawaii compared to all other states for 1972 and 1977, and compared to 15 selected states relatively similar to Hawaii for all 3 years. On average, integration among Hawaiian manufacturing firms was 114.8 percent of that in all other states and 123.2 percent of the level in the 15 selected states. With respect to manufacturing, Billings (1984, p.37) concludes that "it appears that Hawaiian industry is somewhat more vertically integrated than the U.S. norm."1/

Billings also examined the comparative degree of integration in the business service sector in Hawaii and other states. Recall that business services are taxed at the full 4 percent retail rate, so the incentive for integration should be stronger in those sectors. Because value added and total sales were not available for the business service sector by state, Billings compares the relative size of this sector across states measured by the ratio of business services payroll to state personal income. Billings reports the Hawaiian business service to be 0.97 percent of personal income compared to an average of 1.36 percent for the United States, both for 1977. Because this difference is small compared to the variance in the data, Billings concludes that "this difference may be due to a business organizational structure in which a more than usual amount of these services are produced in-house..." (Billings, 1984, p.41).

1/ In reaching this conclusion, Billings noted that the analysis was based on a small sample, that there were possibly confounding factors due to Hawaii's unique location and economy, and that the statistical tests were somewhat inconclusive.

Despite these recognized problems with Hawaii's general excise tax and a preliminary Commission recommendation to substitute a net income-type value-added tax for the GET, in its final report the Tax Review Commission recommended retention of the GET with some structural adjustments to reduce the most egregious inequities. The Commission's decision resulted from three concerns: i) because of the large amount of revenue produced by the GET, a single replacement tax on a narrower base would require a substantially higher rate, ii) because change-over to a different tax would alter the distribution of taxes among businesses, several years of economic dislocations could be expected, and iii) because the potential substitute taxes appeared to be administratively more complex, some business groups opposed any change.

The Commission's conclusion illustrates an important feature of tax reform as opposed to tax design. Despite the numerous inequities and inefficiencies of a tax, once it has been in place for several years, the economic and business structure will have reacted to that system. To change the system to provide benefits in the long run might create short-run problems, which requires careful phase-in of the new tax system. Thus, it is preferable to avoid taxes with such well-known and severe difficulties in the first place.

2. Washington

The State of Washington also levies a multistage gross receipts tax, called the Business and Occupation Tax (B&O Tax). The B&O Tax substitutes for a corporate net income tax, as Washington has neither a personal nor business net income tax, although Washington also collects a 6.5 percent retail sales tax. The general rate of the B&O Tax is 0.484 percent, although other rates apply to specialized lines of business including a 0.471 percent rate on retail sales and a 1.51 percent rate on services. This gross receipts tax provides about 13 percent of total state tax revenue in Washington.

The pure gross receipts tax nature of the B&O Tax has been substantially altered over a number of years by the granting of exemptions and the use of differential rates. For example, Nafziger (1985) reports that corporations are exempt on interest and dividend income, that domestic Washington insurance companies have half of premium receipts exempted, and that interest earned on real estate loans by financial institutions is exempt. Among the differential rates other than those noted above, radioactive waste disposal is taxed at 33 percent, insurance companies at 1.1 percent, meat and fresh fruit processing at 0.363 percent, nuclear fuel assembly and travel services at 0.275 percent, seafood processing at 0.138 percent, and grain wholesaling at 0.011 percent (Nafziger, 1985, pp. 9 and 11). In aggregate, a study by the Washington Department of Revenue showed that if all special tax treatments were eliminated, the overall B&O Tax rate could be lowered to 0.25 percent from the current 0.484 percent, suggesting that favorable B&O Tax treatment has removed almost half of the potential base.

In concept, at least, the combination of Washington's B&O and general sales taxes is very similar to Hawaii's General Excise Tax, which was characterized as a combined general sales/gross receipts tax. Indeed, even the gross receipts rates are similar, 0.484 percent in Washington compared to 0.5 percent in Hawaii. Therefore, the Washington B&O Tax suffers from the same problems as Hawaii's GET, including pyramiding of effective rates due to tax levies on intermediate goods and services transactions, different effective rates imposed on different products even if the same nominal rate is used, and creation of a tax incentive for vertical integration.

Although the degree of pyramiding and vertical integration have not been recently measured for Washington as in Hawaii, Nafziger does report that some industries have successfully argued that their relatively lower profit rates justify lower B&O Tax rates. While profit rates can be influenced by many factors, this action may be a response to the higher effective tax burden placed on some sectors because of a large number of stages of production or a low ratio of value added to sales. In other words, the call for a variety of rates may be a rough attempt to offset tax pyramiding.

In 1985, the Washington Legislature considered substituting a consumption-type value-added tax for the B&O Tax. Apparently a 1.75 percent VAT rate would be sufficient to provide the same revenue as the B&O Tax.2/ Because the VAT would allow deductions for purchases of intermediate goods and services, there would be no pyramiding problem as with the B&O Tax. Although a value-added tax bill was reported out of the House Ways and Means Committee with a favorable recommendation, the proposal was not approved by the House. As in the case of the Hawaii Tax Review Commission, a major concern was the redistribution of tax burdens between sectors that would result from such a tax reform.3/

3. West Virginia

The third state which uses a general gross receipts tax, also called the Business and Occupation Tax (B&O Tax), is West Virginia. The tax is used in addition to a corporation and transportation net income tax, a personal income tax, and a 5 percent retail sales tax, although the B&O Tax is the single largest state revenue source, providing about 31 percent of total state taxes.

The B&O Tax has 26 classes of different types of economic activity involving 18 different tax rates in 1984. The variation of rates for some of the most significant economic activities is shown in Table 4.3.

In addition, of course, some economic activities (such as insurance companies which are subject to a premiums tax, religious or charitable organizations, many nonprofit associations, and businesses engaged in agriculture or selling stocks and bonds) are tax exempt, or effectively taxed at a zero rate.

A pattern to these rate classes is apparent. Activities consumed in large part domestically (wholesaling, retailing, and services) are taxed at relatively low rates which are roughly consistent with those in Hawaii and Washington, while activities which are largely exported and in which the state has a dominant position are taxed at much higher rates. This attempt to use the B&O Tax as a means of exporting West Virginia's taxes suggests that the state government believes that West Virginia has substantial monopoly power in providing these goods and that consumer demand is relatively insensitive to price.

The criticisms of the West Virginia B&O Tax are the same as those for the similar taxes in Hawaii and Washington. Strauss, in a consultant report to the recent West Virginia Tax Study Commission, stated "the taxation of gross receipts is found to be

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2/ Nafziger, 1985, p.2.

3/ Personal communication with Richard Nafziger, Staff Economist, House Ways and Means Committee, State of Washington, June, 1985.

a faulty measure of the privilege of doing business, and creates both economic inefficiencies and inequities among business." (Strauss, 1983, Executive Summary). Later in his report Strauss goes on as follows:

> Because the B&O taxes transactions at every stage of economic activity on the basis of gross receipts, it encourages vertical integration of firms, penalizes specialization by individual firms, and adds to the costs of production below final sales in a capricious and unpredictable manner. (Strauss, 1983, pp.62-63).

This, of course, reiterates the above points regarding gross income taxes. Some evidence is available, however, to support these conclusions for West Virginia as well.

The inequity of West Virginia's gross receipts tax is illustrated by Strauss's computation of effective business tax rates in West Virginia by business sector. Strauss (1983, Table 5.16) reports taxes as a fraction of gross state product by sector for the sum of the gross receipts, corporate net income, and transportation income taxes. Because the corporate net and transportation income taxes combined totaled about $36 million in 1982 compared to $517 million from the B&O Tax, these effective rate calculations are dominated by the B&O Tax. Among selected business activities subject to the B&O Tax, effective rates were 1.162 percent for services, 1.833 percent for durable manufacturing but only 0.385 percent for nondurable manufacturing, 2.890 percent for retailing, 3.265 percent for wholesaling, and 4.262 percent for construction. The relatively high effective rates for retailing and wholesaling, despite very low nominal rates, primarily reflect the B&O taxes levied on sales at prior stages of production and distribution, the pyramiding or cascading effect of the tax.

The difference in effective rates for durable and nondurable goods manufacturing, which is perhaps the most striking result, may partly be explained by the B&O Tax structure. If durable goods manufacturing is more energy intensive than nondurable goods manufacturing, which is often true except for the chemical industry, then the relatively high B&O rates on electricity and natural gas would pyramid into higher effective taxes on manufactured goods which utilize a large amount of those inputs.

In his research for the State of Hawaii, Billings measured the size of the business service sector in a number of states, including West Virginia, by the ratio of business services payroll to state personal income. Billings (1984, p.39) reports that in 1977 the business service sector represented 0.43 percent of personal income in West Virginia compared to 0.97 percent in Hawaii and 1.36 percent for the entire United States. This evidence of a relatively small business service sector in West Virginia is consistent with the hypothesis that businesses have vertically integrated to self-provide these services as a way of avoiding the B&O Tax. Recall that services have a B&O Tax rate greater than for wholesaling, retailing, and manufacturing.

In 1983, the West Virginia Legislature adopted several measures to reduce reliance on the Business and Occupation Tax, the state's business gross receipts tax. First, the tax exemption was raised from $200 to $500, with the effect of eliminating B&O Taxes for many smaller businesses. Second, the B&O Tax rates were scheduled to be reduced 5 percent per year for fiscal years 1986 through 1990. To partly make up the resulting loss of revenue, the Legislature increased the corporate net income tax rate from 6 percent to 7 percent, reduced the net income tax credit for B&O Taxes paid, and added a corporate net income tax surcharge for fiscal year 1985 only. It was understood that other permanent revenue raising measures would have to be added to offset the B&O Tax decreases.

Subsequent to these actions of the Legislature, the West Virginia Tax Study Commission issued its final report and recommendations in March 1984. In that final report, the Commission stated:

> Perhaps the Commission's most important recommendation calls for abolition, as soon as possible, of the Business and Occupation Tax. In its place, the Commission recommends a structure of taxes capable of generating equivalent revenues such as broad based franchise taxes...and a strengthened Corporate Net Income Tax. (A Tax Study for West Virginia in the 1980's, 1984, p.4).

This recommendation was supported by the following conclusion:

> Because it [the B&O Tax] taxes activities at many different rates, and taxes transactions many times below the retail level, it distorts economic decisions and creates artificial incentives to reorganize activities so they fall into lower tax rate classifications. There does not appear to be any rationale for the current structure of tax rates and classifications under the B&O tax, and, therefore, the elimination of the B&O tax should be a high priority for the Legislature. (A Tax Study for West Virginia in the 1980's, 1984, p.52).

4. Other States

Gross income taxes have also recently been used by several other states on a more limited basis. Indiana has a business gross income tax which is an alternative for taxpayers to a 2 percent corporate profits tax, with firms required to pay whichever is greater, according to Due and Mikesell (1983). Since 1977, the gross income tax rate has been scheduled to decrease each year by .05 percentage points, although the decreases were canceled for 1982 through 1984. The rates now vary from a minimum 0.3125 percent to a maximum 1.25 percent. Also, a gross receipts tax was repealed by Alaska for all businesses but banks in 1979, with the tax on banks repealed in 1983.[4/]

Several states continue to use some variant of gross receipts taxes as a way of taxing selected industries, often some specific regulated industries. For instance, nearly every state levies a tax on the premiums of insurance companies, usually at a lower rate for domestic firms. This tax falls short of a pure gross receipts tax because income from other sources, such as investment income, is not taxed. Minnesota, for example, levies a gross earnings tax on telephone and telegraph companies as a substitute for local government property taxes. Numerous other examples exist.

One should recognize that gross receipts taxes on only one or a few specific industries do not create the pyramiding rate problems of general gross income taxes, because the intermediate goods purchased by the taxed industries have not previously been taxed. These specific, selected gross income taxes have been used principally for administrative reasons, often because of the difficulty of measuring profits or property value in those sectors.

[4/] Personal communication with Vince Wright, Research Division, Office of the Alaska Revenue Commissioner, September, 1985.

B. State Value-Added Tax Experience: Michigan

Michigan is a fourth state which does not follow the norm in the United States of utilizing a corporate net income tax as the primary tax collected from business, although Michigan also does not follow the three previous states in using gross income taxes. Michigan's business tax, called the Single Business Tax or SBT, is a consumption-type value-added tax similar in concept to the value-added taxes now common in Europe. As described in Chapter II, the base of a consumption-type VAT is revenue minus purchases of all intermediate goods and services, including capital goods. Michigan computes this tax base by the equivalent approach of adding up wages plus interest plus rent plus profit and subtracting net investment.

Although Michigan's SBT was adopted in 1975, Michigan also used the value-added tax approach from 1953-1967 in the form of Michigan's Business Activity Tax (BAT). The BAT was also a consumption-type value-added tax although liability was computed by subtracting intermediate goods purchases from sales rather than the adding-up approach now used for the SBT. Since 1953, then, Michigan has used value-added taxes predominately and experimented with a corporate net income tax structure for only 8 years, from 1968 to 1975.

The equity and efficiency problems caused by pyramiding of gross income taxes do not occur with a consumption-type VAT. The Michigan SBT has a single rate (2.35 percent) and is applied to a relatively broad spectrum of economic activities, with only government, nonprofit organizations, and agricultural firms exempt. The tax does include several exemptions, deductions, and credits, although a recent analysis by the Michigan Department of Treasury shows that when comparing firms of equal size (value added), effective tax rates vary little between different business sectors.

In effect, then, Michigan's tax structure has the advantages usually attributed to gross income taxes -- broad base, low rate, and relatively stable revenue stream -- without the serious problems of gross income taxes. Because value-added taxes are not common in the United States however, there is some confusion and many misconceptions about the SBT among the state's taxpayers.

As discussed in Chapter II, a national consumption-type value-added tax would have the same base as any national consumption tax, such as a retail sales tax or personal expenditure tax. But the equivalence between a consumption-type VAT and retail sales tax may not exactly hold for a state if the sales tax is levied on consumption in the state while the VAT is levied on goods produced in the state for consumption anywhere, as is the case with the SBT.

C. European Gross Receipts Tax Experience

For 50 years, from 1918-1968, gross income turnover or transactions taxes were the business tax norm in Europe, particularly in Belgium, France, Germany, Italy, and the Netherlands. While dissatisfaction with this tax form arose in each of these nations and some adjustments were therefore made, the creation of the European Economic Community (EEC) and desire for border tax adjustments added another reason for tax reform. In 1967, the EEC issued a directive calling upon its members to substitute consumption-type value-added taxes for the existing gross receipts taxes. Although changes in structure have occurred since that first directive, the VAT is now the general business tax on transactions in Europe.

The previously used turnover taxes (TOT) in Europe suffered from the now familiar set of problems. According to Michael Schiff:

> Specifically, the cascading effect of the TOT, the incentive to vertical integration at the expense of smaller businesses, the discrimination possible in setting arbitrary rebates for exporters covering TOT paid on purchases and the increased incidence of tax evasion were identified as weaknesses of the TOT that needed correction. (M. Schiff, 1974, pp.13-14).

As indicated below, it was also impossible to calculate the export rebate for border tax adjustments under the turnover tax.

1. Selected National Tax Histories

The initial turnover-type gross income tax was adopted in Germany in 1918, to be levied at a rate of 0.5 percent. But the rate was continually increased, reaching 4.0 percent by 1951. According to Tait (1972), at this rate the cascading and resulting vertical integration problems became apparent, leading to the adoption of different nominal tax rates not only for different industries but also for different firms (depending on their integrated status) in the same industry. Germany quickly adopted the proposed EEC VAT in 1968, two years ahead of the EEC target.

Similarly, France adopted a general gross receipts, turnover tax in 1920, initially levied at a rate of 1.1 percent. The tax was revised in 1936 to a manufacturers' sales tax levied at a general rate of 5.38 percent with a rate of 2.04 percent on services. With this tax, firms were exempt on goods physically used up in the production process, but not on capital goods purchases, so that it was effectively a gross income-type VAT rather than a gross receipts tax. The invoice or credit method of calculating the tax, under which firms deduct tax paid on purchases from tax owed on sales, was adopted in 1948. Deductions for capital goods purchases were added in 1953, although the tax still only applied to the industrial sector. The tax was converted to a consumption-type VAT, as recommended by the EEC, applying to production and services in 1968, and was subsequently expanded to cover nearly all economic activities in 1979.

In the Netherlands, a manufacturers' sales tax was replaced by a gross income turnover tax in 1941 during German occupation in World War II. Following the war, the tax was revised in 1954 by exempting retail sales and setting the general rate at 5 percent with higher rates of 7 or 15 percent applied to some commodities. In addition, food and household fuels and some other consumer "necessities" were exempt. Reporting on these developments, Cnossen notes:

> Over time the turnover tax became so unwieldy...that allegedly only its principal draftsman was fully cognizant of all the intricacies. Complexities flowed from attempts to mitigate the cascade effects of the tax, as well as to settle the numerous definitional issues raised by exemptions and by the differential taxation of various commodities. (Cnossen, in Aaron, 1981, p.44).

The EEC's value-added tax was substituted in 1969.

Similar experiences occurred in Belgium and Italy in replacing multistage gross income taxes with a consumption-type VAT in accordance with EEC policy. Sweden and the United Kingdom also adopted the standard VAT, although the taxes it replaced were not traditional gross income taxes. In reviewing the experiences of these other nations, an additional reason for substitution of the VAT is noted. Reporting Italy's experience, Pedone states that "the value-added tax was expected to encourage investment more than the turnover tax had, because investment goods are exempt under the former but were subject to tax under the latter." (Pedone, in Aaron, 1981, p.32).

2. Border Tax Adjustments

The primary reason that the EEC was interested in tax harmonization among its members and termination of gross income turnover taxes was the difficulty of properly exempting exports under those gross receipts taxes. If a consumption tax is to follow the destination principle, under which goods are taxed at the destination where they are consumed, then it is necessary to exempt goods for export from domestic taxes and add the domestic tax to imports. This approach allows different governments to utilize different tax rates without discriminating in favor of the lower tax nations for production. Under the destination principle, consumer goods consumed at a given location are all taxed equally regardless of where they were produced.

Such border tax adjustments are difficult with gross income taxes, however, because the effective rate to be rebated on export is not known and varies among different commodities. This arises because of the cascading or pyramiding effect of those taxes. For example, suppose that a nation with a 5 percent gross income tax produces shirts, some of which are consumed domestically and some exported. At time of export, the tax paid in production is to be rebated to the producer, and the shirt is to be taxed in the nation where it is finally consumed. But the tax paid is expected to be greater than 5 percent of the shirt's price because tax was also imbedded in the prices of intermediate materials and capital goods bought by the shirt manufacturer and used in production. That actual effective rate is difficult to calculate because it depends on the degree of vertical integration of that specific manufacturer.

Consequently, to properly rebate gross receipts taxes on exported goods, a different rate could be required for each producer. Single rates by commodity would discriminate against nonintegrated producers of that commodity while a single rate for all goods would discriminate against all nonintegrated producers who export. In addition, this creates the opportunity for strategic action by one nation to gain a production advantage over others in the market. A nation could argue that because of a less vertically integrated industry it requires a higher export rebate than other nations with a similar nominal gross income tax rate.

The cascade or pyramiding problem also makes it difficult to tax imports fairly, that is equally to similar domestically produced goods. The import tax should equal the aggregate amount of tax paid by the domestic producer at the equivalent stage of production and distribution, because both domestic and imported goods would be taxed on subsequent sales, up to and including the retail level. For the reasons noted above, this also is difficult to calculate and variable between firms, giving rise to the opportunity for punitive taxes on imports.

This problem does not arise with consumption-type value-added taxes because there is no pyramiding or cascade effect. The effective rate is the nominal rate which can be used for border adjustments.

D. Summary

From this review of the gross income tax experience in Europe and among subnational governments in the United States, it seems clear that when these taxes have been used, the problems they create eventually lead to calls to replace the gross income tax with either a net income tax or consumption tax. If those calls are not heeded, it is usually because the political system cannot accommodate the redistributions among taxpayers that tax substitution would entail, rather than because the problems with the gross income tax are denied.

Gross income and gross receipts taxes are still often used by developing nations because of their alleged administrative simplicity. The tax can theoretically be a simple fixed percentage of every transaction. In addition, if a large part of a nation's economy is comprised of one or two major industries, perhaps with even only a few firms, then the bulk of potential tax revenue is easily collected and other tax evasion not terribly important. Moreover, if there are only a few producers they are most often also highly integrated, so that the pyramiding effects of gross income taxes are also insignificant.

None of these conditions applies to the United States. As an economy becomes more developed and complex, the pyramiding effects of gross income taxes become more severe. Those pyramiding effects and the resulting variation in effective rates of tax generate demands for complicating the tax by exemptions and differential rates.

Table 4.1

History of Gross Income Tax Use

Government	Type	Year Adopted	Year Repealed	Substitute Tax
		EUROPE		
Belgium	Gross Receipts Turnover Tax	1921	1971	Consumption-Type VAT
France	Gross Receipts Turnover Tax	1920	1954, industry 1968, all	Consumption-Type VAT
Germany	Gross Receipts Turnover Tax	1918	1968	Consumption-Type VAT
Italy	Gross Receipts Turnover Tax	1940	1973	Consumption-Type VAT
Netherlands	Gross Receipts Turnover Tax	1941 1954 (revised)	1969	Consumption-Type VAT
		UNITED STATES		
Alaska	Gross Receipts	1949	1979	None
Hawaii	Gross Receipts	1935	Current	
Indiana	Gross Income	1933	1977, phase-out begun: to end 2007	Corporate Net Income
Michigan	Consumption-Type Vat	1953 1975	1967 Current	Corporate Net Income
Washington	Gross Receipts	1933	Current	
West Virginia	Gross Receipts	1933	Current	

Table 4.2

Selected State Gross Income and Value-added Taxes 1/

Structure	Hawaii	Washington	West Virginia	Michigan
		State		
Tax Type	Gross Receipts	Gross Receipts	Gross Receipts	Value-Added. Consumption-Type
Pyramiding	Yes	Yes	Yes	No
Capital Deduction	No	No	No	Yes
Rates	0.5% - 4%	0.484%. most 0.471% retail 1.51% services	0.27%-8.63%. 26 classes	2.35%
Percent of State Taxes	25.5% from nonretail	13%	31%	15%
Retail Sales Tax	Yes. 4%	Yes. 6.5%	Yes. 5%	Yes. 4%
Corporate Net Income Tax	Yes. 3.08% - 6.435%	No	Yes. 6% - 7%	No
Personal Income Tax	Yes. 2.25% - 11%	No	Yes. 2.1% - 13%	Yes. 5.35%

1/ Indiana also has a gross receipts tax which is an alternative to a corporate profits tax but which is being phased out.

Table 4.3

Selected B&O Tax Rates

Activity	1984 Rate (percent)
Wholesaling	0.27
Retailing	0.55
Manufacturing	0.88
Service	1.15
Contracting	2.20
Coal Production	3.50
Electricity	2.46 - 4.00
Natural Gas > $5.000	8.63

Source: Strauss. 1983. p.40.

Chapter V

ADMINISTRATIVE ISSUES AND COMPLIANCE CONSIDERATIONS

This section of the report considers alternative ways of collecting a gross income tax, the problems that arise in applying the tax to specific types of income or commodities, the difficulties created by attempts to provide tax relief for specific commodities, and the expected number and type of taxpayers under alternative gross income tax structures. The discussion assumes that a gross income tax directly imposed on businesses would either be a pure gross receipts tax (with no deductions) or a gross income tax, under which the tax base is gross receipts minus a deduction for noncapital goods and services purchased from other firms. This latter tax is often called a gross income VAT, as described in Chapter II A. of this report.

A. Method of Computation

As is usually discussed for value-added taxes, there are three general ways of computing business gross receipts taxes. The tax may be computed on a periodic basis where receipts are added and allowable deductions subtracted and the tax rate applied to that base (usually called the subtraction approach). Or the tax can be added to all sales with a firm's liability equal to the difference between the tax collected on sales and the tax paid on appropriate purchases. This is called the invoice method, and is used in Europe for the consumption-type VAT. Third, the tax base can be computed by adding the factor payments which equal receipts or the appropriate measure of value added. This is called the adding-up or addition approach.

If the tax is a pure gross receipts tax with no deductions, then the subtraction and invoice methods would be identical if the tax was required to be remitted periodically over the course of a year under either method. Under the adding-up approach, the base of a pure gross receipts tax would equal the sum of all costs, that is all purchases from other firms plus wages plus depreciation plus interest paid plus rent plus profits.

For a gross income-type VAT, there are important administrative differences among the three methods. Under the subtraction approach, firms would file an annual return on which all sources of income were added and purchases of noncapital goods and services from other firms subtracted. Under the invoice approach, firms would collect tax on all sales and receive a credit for tax paid on purchases of noncapital goods and services from other firms. For the adding-up approach, the base would be the sum of wages plus depreciation plus interest paid plus rent plus profits.

B. Problems in Measuring Gross Income

There are several types of business activities for which there are particularly difficult problems in measuring gross receipts or gross income value added. If the subtraction or invoice computation methods are used, these problems necessarily arise from difficulties in identifying all sources of income or in distinguishing noncapital goods purchased from other firms from capital purchases. Under the adding-up approach, the problems arise in measuring the sum of costs. As described below, for administrative reasons, alternative computation methods may be necessary for different sectors.1/

1/ Most of these problems apply to measuring value added generally and have been extensively discussed. See, for example, ACIR (1984) and McLure and Ture (1972).

1. Financial Institutions

Banks provide many services to customers at a zero or below market price, for example a checking account with no service charges or fees but also paying zero or below market interest earnings on deposits. In effect, the account holder is paying an implicit price for the service in the form of reduced interest earnings. It may be impossible to accurately identify the true price for those services. It is the conventional wisdom, therefore, that the subtraction and invoice methods are inappropriate for banks.

While it may therefore seem reasonable to use the additive computation method for banks, this creates a second problem. Interest paid is normally added to other costs to measure gross receipts or gross income value added, but interest paid for a bank can be thought of as a "cost of goods sold". Under a gross income-type value-added tax, the base is income minus noncapital purchases from other firms, or wages plus depreciation plus rent plus profits plus capital costs (usually interest paid). But with banks, interest paid to another firm is effectively the cost of purchasing a "material" from that firm and thus should be deducted, assuming it has been taxed. One suggested solution is to subtract interest paid from the additive base and add interest received for banks.2/

Measuring gross income of insurance companies also poses all of the problems of banks, plus several others. First, as Aaron (1981) has pointed out, insurance companies provide both insurance against risk and personal savings opportunities. The interest earned by the company from policyholders' savings and the effective interest paid to policyholders should be treated in the same way as for banks. On the other hand, the true insurance component of policies represents value added by the insurance company and should be taxed as such. There are, however, substantial problems in measuring the price or value added for that service, problems which vary in difficulty for different types of insurance companies. The approach taken by most states is to levy a tax on the amount of insurance premiums. But even this is an imperfect way to tax gross insurance receipts. Mutual companies, for instance, often pay "dividends" to policyholders which are partly a return on investment and partly a reduction of premiums. It is nearly impossible in that case to determine the true gross income from insurance operations.

2. Government

It is not clear whether a gross income tax collected from business entities would include governmental organizations in the base, unlike current taxes. If government is to be included, gross income for government must be defined, and almost any definition selected will create incentives for government to substitute alternative means of achieving its objectives without collecting revenue. If government gross receipts are defined as taxes plus grants plus fees and charges, then tax credits, regulations, and loan subsidies could be substituted for direct government expenditures to achieve the same result, thus reducing the government's tax base. By creating this reason for substitution of government subsidies for expenditures, taxation of government gross income might make government less efficient in carrying out its traditional responsibilities.3/

2/ See ACIR, 1984, p.76.

3/ For discussion of these incentives in a slightly different context, see Suits and Fisher, 1985.

If government gross receipts are to be taxed, the treatment of intergovernmental grants must also be clarified. Grants could be classified as income to the grantor government, which then contracts with another level of government in the Federal system to provide specific services. Or grants could be classified simply as income to the recipient governments.

An alternative approach to taxing governments would be to use a modified adding-up approach. Identifiable costs (wages, rents, and interest paid) would be added to the cost of capital goods (in lieu of additions for depreciation and profits). This approach would be administratively simpler than taxing gross receipts, and would not be subject to the problems inherent in taxing gross receipts noted above.

If, as seems more likely, governments are not to be subject to any tax, a different set of problems arises. In many cases, government provides goods and services which compete with private nonprofit and private for profit enterprises, including primary, secondary, and higher education and numerous public utilities. To exempt the government enterprises but tax the competing private ones would generate economic inefficiencies and a tax incentive for government provision. If provision of government services is not taxed under a gross income-type VAT, then private, taxable firms should not be allowed a deduction for purchases of those government goods and services. For instance, a firm purchasing private garbage collection service should be allowed a deduction for that "cost of goods sold", while a similar firm receiving government garbage collection service (even if paid for by fees) should not be allowed a deduction for the portion of government-provided goods and services that has not borne a tax. This obviously would greatly complicate administration and enforcement of the tax.

3. Agriculture

As with a net income tax, problems also arise in the measurement of gross receipts for agricultural businesses, both from production for home use and in the treatment of government subsidies. If either the invoice or subtraction method of computation is used, then sales by a firm are the starting point. But many agricultural producers, especially family-operated farms, use a portion of their production for themselves, with no sale occurring. Under a gross income tax it would be necessary to impute a sales value to the owner-used product to avoid creating the horizontal inequity of treating similar agricultural producers in different ways.

Rules must also be created for dealing with government subsidies for agricultural enterprises. One recent program attempted to reduce production by compensating farmers with payments-in-kind for not producing. These payments of agricultural products should be counted in gross income, which also requires imputation of value. But because the prices of agricultural prices can vary widely in a year, detailed rules are required to outline how those payments are to be valued. Alternatives include valuations based on the prices i) on the date product ownership is transferred from the government to the firm, ii) on the date the firm sells the product, or iii) on a prespecified "tax day" date. While both of these difficulties also exist under a net income tax, the problems may be more severe under a gross income tax which does not include any exemption to remove smaller businesses from the tax base.

4. Housing

If production and sale or rental of housing is to be included in a business gross income tax, the implicit rental value to owner occupiers would have to be imputed to provide neutral treatment of rental and owner-occupied housing. Because a business gross income tax would apply to gross receipts or gross receipts minus cost of goods sold, the tax would apply to receipts when a builder sells a housing unit (or any building) to any owner, regardless of whether the owner is to be an occupier or a lessor. If the owner leases the housing unit (or building) to a different occupier, the receipts from that transaction would also be subject to the tax. The owner-lessor would not be able to deduct the cost of the housing unit (building) in calculating gross income tax liability even under a gross income-type VAT, because the building is a capital purchase.

If the implicit rental value of owner-occupied housing which accrues to the owner is not taxed, as seems likely, then the tax creates an incentive for owner-occupied over rental housing. This is neither fair nor efficient. It would be difficult technically to tax the rental value of owner-occupied housing, however, and politically difficult as well, which is reflected by the fact that the imputed rental value to owner occupiers is not taxed under the current personal income tax either.

Because few, or even no, deductions would be allowed under a gross income tax, including no deductions for depreciation, the relative degree of taxation on housing (and commercial buildings) under a business gross income tax would be much greater than under the current net income taxes. If income from leased property is included in the tax base, then rental housing (or buildings) would effectively be taxed once at sale and again when it is leased. While the builder would be allowed deductions for the materials and supplies which go into the house, there would be no deduction for labor or interest costs, nor for the builder's equipment (which are capital goods), which also includes tax in the purchase price paid by the builder. A nominal tax rate of 6 percent, for instance, could easily pyramid into a 10 to 15 percent effective tax rate on rental property. It would be unfair and inefficient to tax rent on leased houses and not the implicit rent to owner occupiers, but not taxing rent on leased property would come at a substantial revenue cost, requiring a higher rate generally, and would complicate administration and enforcement of the tax.

5. Summary

These administrative problems which arise in the definition and measurement of income are certainly not unique to gross income taxes, but are shared by all types of income taxes. Nor is the list presented here exhaustive or complete. Therefore, substitution of a gross income tax for the current net income taxes would not reduce administrative problems arising from the definition or measurement of income, which is one of the chief administrative difficulties under the current net income taxes. Because more firms and individuals could be subject to any gross income tax than currently pay net income taxes, the administrative problems of income measurement could be greater, at least in number, than under the current tax structure. Evidence on the number of taxpayers under alternative tax structures is presented and discussed in Chapter VI D. of this report.

C. Exemptions and Tax Relief

There are at least three reasons why policymakers may wish to exclude some commodities or economic sectors from taxation under a gross income or a gross receipts tax. First, a general gross income tax as usually proposed would be much less progressive than the current net income taxes, and would in fact be regressive with respect to annual income, as shown in Chapter VI of this report. One way to reduce this regressivity is to tax specific commodities or sectors, presumably ones that are relatively more important for lower income households, at lower rates than apply generally. This is common practice under the European VATs and state government gross receipts taxes. It is also used for nearly all state retail sales taxes.

Second, policymakers may wish not to impose a business gross income tax on commodities for export, anticipating that the purchasing nation will impose that type of tax on sale of those commodities. In other words, the government may wish to follow the destination principle in levying a gross income tax on business. In that case, it would also be necessary to impose an appropriate gross income tax on imports.

Third, as noted above, administrative problems or policy judgments may dictate that specific sectors (such as finance and insurance, government, agriculture, or housing) be accorded special treatment different from the general rules of a gross income tax imposed on business activities.

Specific commodities or sectors can be provided tax relief in two general ways, either by exempting specific types of sales (income) from taxation or by applying a zero rate to different sectors and allowing a rebate or credit for tax paid by those sectors on purchases of goods and services from other firms. In discussions of value-added taxes, these two mechanisms for providing tax relief are usually referred to as exemption and zero rating. Under the exemption approach, no tax is imposed on the exempt stage, but purchases occurring prior to the exempt stage still bear tax. Under zero rating, in contrast, a tax rate of zero is charged on the "exempt" stage and the seller receives a full credit or rebate for tax paid on purchases.

The application of these methods under a gross income tax of the types considered can be illustrated by an example. Suppose that a gross income-type VAT (base is gross receipts minus purchases of noncapital goods and services from other firms) is collected from business using the subtraction method (gross receipts minus costs of goods sold is reported for a specified period on a tax form). Suppose also that policymakers desire to avoid taxing production and sale of food for home consumption as a way of reducing the regressivity of the tax. Exempting any one sector from the tax obviously would not eliminate the full tax burden on food purchases. If producers (farmers) are exempt, tax would still be collected from packagers, distributors, and retailers, which would add to the final price for food paid by consumers. It would be inefficient to exempt all of the activities of these sectors because at least the latter three are expected to derive revenue from transactions not involving food. The trucking firm which delivers food and the retail business which sells it would likely also transport and sell other commodities as well.

A more complicated method of not taxing to all transactions involving food is another possibility. Each firm, in completing its tax return, would separately identify revenue derived from sales of goods or services related to the production or distribution of food, and apply a zero tax rate to that revenue. Retailers would keep separate records for food sales, much as they do now in many states which exempt sales of food from retail sales taxes. Wholesalers, transportation firms, preparers, packagers, as well as farmers would similarly separate revenue derived from food and nonfood transactions. Because food transactions are not taxed, these firms should also not be allowed to deduct the cost of (untaxed) purchases from these other firms involved in the food business. For instance, if food sales are not taxed, then retailers should not deduct the cost of purchasing the food for resale. But what of the oil company which sells gasoline to the trucking firm, which uses the gasoline to transport food, or the accounting firm which provides service to a retailer who sells both food and taxable commodities? It would seemingly be infeasible for the oil company and accounting firm (as well as for every other firm involved in the process) to also separate revenue related to food production and distribution. Such a system would be administratively intractable and would impose enormous compliance costs on taxpayers.

Moreover, even if such an administrative system could be made to work at reasonable cost, it may not remove food consumers from bearing some of the revenue cost of the business gross income tax. Recall that, under a gross income-type VAT, no deduction is allowed for capital purchases or depreciation. Therefore, absent any attempt to free capital goods of tax would be collected on sales of capital goods to firms in the food production and distribution business, and would be reflected in the prices for food paid by consumers. Such capital goods would include retailer's display cases, trucks owned by distribution firms, and farmers' planting and harvesting equipment.

The only possibility of removing all tax burden on a particular commodity is to exempt the final sale of the commodity from tax and provide the seller a credit or rebate for all tax collected at prior stages of production and distribution. In the case of food for home consumption, no tax would be collected on revenue from retail sales of food and food retailers would receive a credit or rebate for taxes generated from all sales below the retail level related to food.

But this method is also unworkable precisely because it is difficult to determine and impossible to generalize the amount of tax collected at prior stages of production and distribution. As discussed and demonstrated in Chapter III of this report, the ultimate gross income tax burden on any commodity depends on the number of separate transactions or the number of separate stages of production involved in producing the commodity. Aggregate tax burden can be reduced by vertically integrating with suppliers or, equivalently, substituting in-house provision of supplies or services. Under a pure gross receipts tax, any integration will reduce tax liability, while under a gross income-type VAT, vertical integration with capital goods providers will reduce tax liability.

It follows that the tax collected at prior stages of production and distribution is not expected to be the same for different types of the same general commodity (one type of food compared to another) nor even for different brands of the same type commodity (one brand of crackers compared to another). Even if the substantial measurement problems can be overcome, general rebates of prior taxes collected by commodity class will, therefore, be too small for some commodities in the class and too large for others. In general, commodities produced by relatively more vertically integrated firms or processes will receive rebates which are too large, while those produced by more separate firms will receive rebates which are too small.

In the case of tax relief for commodities which are to be exported, the above rebate method, rather than some form of exemption, is the only possibility because it is often not known at the time of production which units of a particular commodity are to be exported. Exemption for the entire sector is thus inappropriate. The alternative is to rebate to the exporter, at the time of export, all taxes collected from prior stages of production and distribution. But, as noted above, it is impossible to do so with any degree of accuracy. Indeed, as noted in Chapter IV of this report, this problem of determining proper rebates for exports was a primary reason why the European nations repealed various types of gross income or gross receipts taxes in favor of consumption-type VATs.

D. Number of Taxpayers

Under an individual gross income tax, there would be both more total returns and more returns with positive tax liability than under the current structure. Similarly, under a business gross income tax, there would be more returns reflecting a positive tax liability, even if currently exempt organizations were to remain exempt.

If the gross income tax were to apply to a broader class of organizations than the current net income taxes (such as nonprofits or government), then obviously the total number of returns filed would be substantially higher than under the current system.

The increase in the number of returns and returns with positive tax liability results because there would be no deductions or exemptions in the individual gross income tax and either no deductions (for a gross receipts tax) or limited deductions (for a gross income-type VAT) in the business gross income tax. Consequently, individuals would owe tax on the first dollar of income while businesses would owe tax either on the first dollar of gross receipts or the first dollar of receipts less noncapital purchases. All individuals with income would have to file and pay tax, while under the current system individuals with gross income of less than $1,000 and with no income tax withheld need not file (e.g., children with small amounts of interest income). Moreover, many taxpayers who file under the current structure have no tax liability, and file only to obtain refunds of withheld amounts, would have a positive tax liability under a gross income tax: their returns would require more extensive revenue processing, under a gross income tax.

The magnitudes of some of these potential changes are shown in Table 5.1. Of the 96.3 million individual tax returns in 1983, 18.3 million or 19.0 percent had no tax liability: exemptions, deductions, and credits shielded income from tax. Given the number of projected individual returns for 1985, about 19 million more individual taxpayers would have liability under a gross income tax than under the current individual income tax structure. In addition, many individuals who do not now file would also have positive liability. The amount of tax which could be collected from these individuals is expected to be small. On average, over 90 percent of individual return filers with no tax liability had Adjusted Gross Income (AGI) of less than $9,000. Returns with AGI less than $9,000 and a positive liability had average tax liability under the current structure of about $300. If the total AGI in those classes were taxed at 10 percent (which could be the case under a gross income tax), average liability would be about $450. Under an individual gross income tax then, the Internal Revenue Service would be expected to process at least 18 million more individual returns with tax liability than currently (an increase of 18 million from the current 78 million, or 23 percent), with minimal revenue gain.

Even greater percentage increases in returns with positive tax liability are expected for businesses under a gross income tax. The data in Table 5.1 show that about 31 percent of nonfarm proprietorships, 53 percent of partnerships, and 45 percent of corporations in 1982 had zero taxable income. Again, these groups of returns without tax are composed mostly of small firms, and relatively small amounts of tax would be collected from these firms, even under a business gross receipts tax. In 1980, 65 percent of sole proprietorships, 60 percent of partnerships, and 28 percent of corporations had gross receipts of less than $50,000.4/

In summary, based on the data in Table 5.1, one could expect 25 million more tax returns with positive tax liability in 1985 under a gross income tax than under the current structure, an increase of about 25 percent over current levels. If, in addition, potential returns from individuals who are now not required to file and from governments are included, the increase in returns with positive liability could approach 28 to 30 percent.

4/ See ACIR, 1984, p.91.

Table 5.1

Number of Tax Returns by Type and Taxable Status. 1982 - 1983

Type	Number of Returns	Number of Returns Without Tax 1/	Percent of Returns Without Tax	Number of Projected 1985 Returns
		(millions of returns)		
Individual 2/	96.3	18.3	19.0%	100.8
Nonfarm Proprietorship 3/	10.7	3.3	30.8	11.5
Partnership 2/	1.5	0.8	53.3	1.8
Corporation 4	2.9	1.3	45.0	3.3
Exempt Organization 2	0.4	0.4	100.0%	0.4

1/ No tax liability or no net income.

2/ 1983.

3/ Included in individual class above.

4/ 1982.

Source: SOI Bulletin. Fall 1985.

Chapter VI

ECONOMIC EFFECTS OF GROSS INCOME TAXES

A. Rates and Revenue

The presentations in Tables 6.1 and 6.2 characterize potential tax bases for gross income taxes collected both from businesses and individuals. However, it is difficult to estimate precisely the expected base of a gross income tax, and thus the tax rates necessary to generate any given amount of revenue, because neither the type of gross income tax nor the nature of potential exemptions is exactly known. Thus, the presentations are not intended to be precise, but rather to suggest roughly the likely magnitude of rates for a gross income tax system.

1. Gross Income Tax Collected from Businesses

The starting point for this analysis is a business gross income tax, which is shown in Chapter II to be a gross income-type value-added tax with a base equal to gross national product. In 1984, GNP was about $3.7 trillion, so that a pure gross income-type VAT on all activities would generate about $37 billion for each 1 percent of tax rate. This and the other computations in this chapter assume that the change in tax structure would not alter economic activity and change the magnitude of the base.

It is not clear that this type of gross income tax would apply to the activities of entities which are currently not taxable, including government purchases of goods and services and personal consumption of services produced by nonprofit organizations. If those activities which are currently not taxed continued to be nontaxable under the gross income tax, the base decreases to about $2.8 trillion, which would generate about $28 billion of revenue for each 1 percent of rate. The net budget impact of either including or excluding the national government from the tax base is probably the same, however, because government expenditures would have to be greater to pay the higher costs associated with taxing government purchases.

As discussed in the previous chapter, it would be administratively difficult to tax some activities, for instance the implicit rent to owner-occupied homeowners and foreign travel expenditures by United States residents. If the rent to owner occupiers cannot be taxed, it would be inefficient and inequitable to tax explicit residential rents. If all housing rents and foreign travel were not taxed, then the potential tax base decreases to about $2.4 trillion or $24 billion of revenue for each 1 percent rate.

Other potential tax base changes are possible as explicit policy decisions. Two seem particularly likely. Following the European model of value-added taxes, exports would likely be exempt from the tax while imports would be included in the base. This adjustment is achieved by subtracting net exports from the potential base (because exports were smaller than imports in 1984, this increases the potential base). Following the sales tax practice of 28 of the 45 state governments with a general sales tax, food purchased for off-premises consumption may also be excluded from the tax base. As shown in Table 6.1, these two policy exemptions further reduce the potential base to about $2.1 trillion or $21 billion for each 1 percent rate.

Other potential policy exemptions listed at the bottom of Table 6.1 are for personal consumption expenditures on medical services and supplies and for services provided by financial institutions for which there is no direct consumer charge. If all of these potential exemptions were adopted, the gross income tax base would have equaled approximately $1.8 trillion in 1984, generating revenue of about $18 billion for each 1 percent of rate. Potential business tax base D is about 49 percent of GNP, showing that about 51 percent of the potential tax base would be eliminated by the 8 major exemptions considered. Of course, it is also possible that other activities would be made tax exempt which are not included in this potential list.

In a 1984 report, the Advisory Commission on Intergovernmental Relations also developed a "realistic" estimate of a gross income-type VAT base. They concluded that the "maximum feasible base" was $2.1 trillion out of 1982 GNP of $3.1 trillion, or the "maximum feasible base" was about 69 percent of the potential base. In defining that measure, ACIR assumed exemptions for net exports, the rental value of homes and farms, foreign travel expenditures, religious and welfare activities, and government purchases of goods and services. Using that measure the "maximum feasible base" in 1984 would have been about $2.6 trillion. The ACIR also identified an additional $312 billion of "probable exemptions," which would further reduce the tax base to about 58 percent of the potential base.

2. Gross Income Tax Collected From Individuals

One possible personal gross income tax is a flat-rate tax on all income of individuals. In Table 6.2, the maximum potential base of such a tax is estimated by adding several types of personal money receipts which are not included in personal income to the personal income base. Those additional income types are personal contributions for social insurance (which are not included in personal income but which are included in taxable income under the current system), capital gains from sale of assets (all of long-term and short-term gains), taxable private pensions, inheritances, and gifts. The latter two are roughly estimated, inheritances by grossing-up of the value of estates reported on estate tax returns, and gifts as 1 percent of personal consumption expenditures. Using this approach, the maximum potential individual gross income tax base for 1984 is about $3.4 trillion or more than 92 percent of gross national product. Therefore, such a tax would generate about $34 billion for each 1 percent tax rate.

In proposing a gross income tax structure, some amount of "savings account interest" might be made exempt. If all personal interest income were excluded from the tax, the potential 1984 base would be reduced to about $2.9 trillion which would generate about $29 billion of revenue for each 1 percent rate. In addition, a policy decision could be made that government transfer payments to persons would also be excluded from the tax. In that case, the potential base is further reduced to about $2.5 trillion or about $25 billion of revenue for each 1 percent rate. Just the exclusions for personal interest and transfer payments reduce the potential individual gross income tax base by about 26 percent. As with the business gross income tax discussed above, other exemptions or credits are also possible.

3. Tax Rates

Given any assumed revenue target, the required tax rates can be calculated for each of the potential gross income tax bases identified above. One straightforward benchmark is the rate required for the gross income tax to exactly replace the current individual and corporate income taxes. Those rates for combinations of the potential tax bases identified above are shown in Table 6.3.

One should understand that the calculation of potential business gross income tax bases shown in Table 6.1, upon which some of the tax rate calculations in this chapter are based, assumes that specific commodities are completely eliminated from the tax base by zero rating, so that no tax liability is reflected in the consumer price of those commodities. In practice, it is extremely difficult to zero rate items under the type of gross income tax considered here, because no deductions are allowed for capital goods. If zero rating is not possible, simple exemption of these commodities would mean that the tax base would be larger (and thus the required tax rates somewhat lower).

The lowest feasible gross income tax rate that would generate the same revenue as the current Federal income taxes is about 6.7 percent, that applying if all types of personal income are taxed and only government and nonprofit organizations are exempt from the business gross income tax. If even a few additional exemptions were allowed, for personal interest and government transfer payments and for housing, net exports, food, medical care, and financial services, for example, the required rate rises to about 9.5 percent. The rates shown in Table 6.3 vary from 6.74 percent to 9.47 percent, depending on the number of activities and types of income exempt. As additional exempt activities and income are allowed, even higher rates would be required.

The relevant rate would be applied both to individual gross income and to business gross income, so the effective tax rate for any individual taxpayer would be much greater than the nominal rates listed above. For instance, suppose that a gross income tax rate of 10 percent is applied to both individual incomes and to total business receipts (with only a deduction for noncapital purchases from other firms). As shown in Chapter III of this report, the 10 percent business gross income tax rate would cascade through the various stages of production. Because there is no deduction for capital purchases or depreciation at any stage, the effective rate on the price of consumer goods at final sale would be more than 10 percent, perhaps 12 to 13 percent given the magnitude of capital expenditures. In addition, individuals would be taxed at a 10 percent rate on all income. The 10 percent nominal gross income tax, then, would be effectively equivalent to a 10 percent very broad-based income tax plus a 12 to 13 percent sales tax on consumer purchases.

There is another, perhaps simpler, way to characterize these gross income tax rates. If the gross income tax is to generate the same revenue as the current individual and corporate income taxes, the share of gross national product to be collected in tax is the same. For fiscal year 1985, individual and corporate income tax revenues were about $412.8 billion, which represents about 11 percent of 1984 gross national product. Any equal-yield tax which substitutes would generate the same fraction of GNP. A relevant factor is how the different structure of rates and bases would alter the equity and efficiency of the tax system, the issues considered in the remainder of this chapter.

B. Equity Effects of Gross Income Taxes

1. Individual Income Taxes

Advocates of tax reform have long argued for at least some broadening of the tax base, which could be accompanied by reductions in tax rates in order to generate the same amount of revenue. Base broadening and tax rate reductions are at the center of a number of reform proposals. The question is: How far to go? One consideration in answering this question is the effect on equity.

Any major change in the tax base, as well as any change in the structure of tax rates, can affect the equity of the tax system by altering the distribution of the tax burden among taxpayers. Changing tax rates obviously can shift the tax burden. Base broadening -- expanding the definition of what is considered income for tax purposes -- also involves some redistribution because the previously-excluded income is not received in exactly the same proportion by all groups. The most extreme degree of base broadening and revision of the rate structure would occur with a pure gross income tax imposed at a single flat rate.

The redistribution caused by a pure flat rate gross income tax stems both from broadening the base to gross income and from collapsing the rates and eliminating exemptions. Applying a single flat rate instead of a set of progressive rates to any particular tax base, removing the personal exemption, and beginning the rate schedule with a positive tax rate (in effect eliminating the current zero-bracket amount (ZBA)) would greatly increase the tax burden on the poor and substantially reduce it for the wealthy. The redistributive effect of broadening the base from the current law version of net income to gross income is less intuitive. Some of the additions to the tax base, such as taxing all capital gains and allowing no depreciation deductions, would tend to increase the effective tax rates of the high-income groups. Other changes, such as including transfer payments in the tax base, would tend to raise the taxes paid by lower and middle-income groups.

Table 6.4 compares the distribution of individual income taxes under current law and under an individual gross income tax that would raise the same amount of revenue. It also attempts to identify the sources of the redistribution by separating the effects of changing the rate structure and eliminating the personal exemptions from the effects of redefining the tax base from net to gross income.

The table clearly indicates that just replacing the current rate structure with a single flat rate would cause substantial tax relief for upper income classes and a major tax increase for lower income classes. Comparing the taxes paid under current law -- column A -- with the taxes under a flat rate tax applied to the same tax base (including the same exemptions, itemized deductions, and ZBA but no tax credits) -- column B -- shows that tax bills would increase by about 50 percent for families with economic income of $20,000 or less. At the same time, taxes would fall by over 50 percent for families in the top income class.

Along with the progressive rate structure, the zero-bracket amount and personal exemptions are the components of current law that are most important in alleviating the tax burden on lower income groups. Extreme versions of a flat rate gross income tax would allow neither a ZBA nor any personal exemptions. Under current law, deductions are itemized only for those taxpayers whose itemizable deductions exceed the zero-bracket amount. Since itemizable deductions tend to rise with income, the zero-bracket amount (formerly known as the standard deduction) exceeds the amount of deductions that most lower income taxpayers would be able to itemize. This is seen by the fact that only 10.9 percent of returns with AGI below $15,000 itemized deductions in 1983, compared with 95.5 percent of returns with AGI over $50,000. Both the zero-bracket amount and personal exemptions represent larger portions of otherwise taxable income for returns with little income than with large amounts of income.

The distributional consequences of eliminating the zero-bracket amount can be seen by comparing columns C and B. Column C shows the taxes under a flat rate tax applied to the first dollar of income in the current tax base, i.e., no ZBA. (The tax base here is effectively current law "taxable income.") The tax burden would again shift dramatically from upper to lower income classes. Just eliminating the ZBA would raise taxes by more than 70 percent for families with income under $10,000. This would happen primarily by bringing 70 percent more families in this income class onto the tax rolls. For families with income between $10,000 and $20,000, taxes would rise by over 25 percent, and the number of taxpayers would increase by almost 20 percent. On the other hand, eliminating the ZBA would lower the revenue neutral tax rate enough to give families at the top end of the income scale -- with income over $200,000 -- an additional tax cut of $5 billion, or 14 percent.

Personal exemptions have much the same effect on the distribution of the tax burden as does the zero-bracket amount. Because an exemption is a fixed amount (with extra exemptions for blind and elderly persons), its relative value is greatest for the lowest income individuals. Column D shows how taxes would be distributed if a flat rate were applied to the current law tax base with no ZBA and no personal exemptions. Comparing columns C and D, it is clear that the personal exemption unambiguously and substantially increases the progressivity of the tax system. Eliminating exemptions raises the taxes paid by each income class under $50,000, and lowers taxes for income classes above $50,000.

The net effect of moving to a pure flat rate tax, with no change in the concept of income subject to tax except eliminating the zero-bracket amount and personal exemptions, would be a drastic redistribution of the tax burden form upper to lower income classes. Families with incomes under $15,000 would pay nearly three times as much tax as they do under current law, while the wealthy (with income over $100,000) would pay less than half as much as at present.

The additional redistribution that would come from broadening the tax base to encompass gross income would be much less dramatic than one from collapsing the rate structure and eliminating the ZBA and personal exemptions. (Indeed, the distribution of a pure flat tax on a broad measure of personal income would be slightly more regressive than the distribution of a gross income tax.) The tax base in column E approximates gross income, defined as personal income (under the National Income and Product Accounts definition, except that imputed amounts and income tested transfer payments are excluded) plus all capital gains, depreciation, and taxable pensions. A tax on gross income would substantially increase taxes for the very lowest income class, compared to a flat tax on the current law version of net income (column D), by bringing the vast majority of families with economic income in this class onto the tax rolls. (Much of the apparent increase for the under $10,000 class also results from a difficulty in the way the definition of economic income treats pension income.) Taxes would also increase for families with income between $10,000 and $20,000, but less severely. Taxes would fall for all income classes between $20,000 and $200,000, and then actually rise for families with over $200,000 of income.

Generally, only a modest part of the shift in the tax burden that would accompany a gross income tax would result from taxing gross, instead of net, income. Rather, the flat rate, with no ZBA or personal exemptions, would be responsible for most of the additional taxes imposed on low- and middle-income families.

2. Business Gross Income Tax

It is also possible to examine how a gross income tax collected from business would be distributed among different industries. In its 1984 report, the Advisory Commission on Intergovernmental Relations examined that issue for a gross income-type value-added tax. Those results are shown in Table 6.5 (which is reprinted from the ACIR report).

Under a gross income-type VAT, tax is levied on receipts minus noncapital goods purchases from other firms. Business gross income taxes vary from a low of 0.12 percent of receipt in wholesale trade for each 1 percent tax rate to a high of 0.93 percent of receipts for professional (medical, legal, accounting) services. Relative to receipts, the effective tax rate would be relatively high for most services, including financial, insurance, and real estate services.

Table 6.5 also includes gross income tax liability as a percent of net income, which shows how business tax burdens would be changed if the business gross income tax substituted for the net income tax. Those industries for which gross income tax as a percent of net income exceeds the average for all industries would generally face an increased tax burden from the tax substitution. Those industries with the greatest gross income tax burden relative to net income are agriculture, lumber and wood products manufacturing, mining, amusement and recreation services, and retail trade. Those industries with the smallest gross income tax burden relative to net income are most manufacturing, personal services, and hotel and lodging services.

C. Gross Income Tax Effects on Capital Formation 1/

An important effect of any major tax policy change is the effect on capital formation. The effects of any gross income tax proposal on capital formation can be divided into two categories. The first of these is the effect on firms' investment incentives, while the second is the effect on the saving incentives of consumers. Both are considered below.

1. Investment Incentives

Over the last two decades, economists have increasingly agreed upon the "cost-of-capital approach" as the correct procedure for analyzing the effects of tax policies on business incentives to undertake capital investments. An early exposition of the model was by Hall and Jorgenson (1967), while a recent application to capital formation in the United States and Europe is King and Fullerton (1984). The calculations reported in this report use the specific cost-of-capital model presented in Fullerton (1985).

The basic notion of these models is that a profit-maximizing firm will undertake an investment if the present value of the return from the investment is at least as great as the net outlay necessary to acquire the asset. In competitive market equilibrium, the present value of the net return will equal the net outlay exactly. Tax factors enter by affecting either outlay or returns. On one side of the equation is the gross acquisition cost less the investment tax credit. On the other side of the equation are the various factors that influence the present value of net returns, including the business income tax rate, the property tax rate, the inflation rate, the rate of discount, the structure of tax deductions for depreciation, and the actual rate of economic depreciation.

1/ The authors wish to thank Yolanda Kodrzycki Henderson for generously providing the computer programs and documentation for the cost-of-capital calculations reported in this chapter.

An important technical issue concerns specification of the appropriate rate of discount for the calculations. Many different interest rates exist simultaneously in the economy. In order to consider the different rates in a consistent way, it is customary to adopt either of two assumptions about arbitrage in the capital market. Under the approach called "firm arbitrage", firms are assumed to compare proposed investments with the alternative of retiring a unit of debt. By retiring a unit of debt, firms save the interest payments on the debt less the amount of any tax reduction which results from the deductibility of the interest payments. Thus, firms would undertake new investments if the yields were equal to that from retiring a unit of debt.

The "firm arbitrage" approach assumes that all of a firm's activities will earn the same net rate of return. However, it also implies that individuals will earn different net rates of return on different investments. The alternative approach is called "individual arbitrage", by which it is assumed that individuals hold all of the assets in the economy and that they act so as to equalize rates of return across assets. With this approach, an individual investor will only hold a particular asset if it earns at least the rate of return that could be earned by holding debt.

In principle at least, the firm arbitrage model and the individual arbitrage approach could yield different results. The actual calculations made for this study, however, show similar results for both assumptions. If forced to choose between the two models, the firm arbitrage approach seems more realistic, because different individuals will hold different assets based on their different marginal tax rate brackets. The calculations reported here are based on the firm arbitrage model. All of the calculations reported here also assume a 5 percent net-of-tax rate of return in the economy. Calculations are reported for two different inflation rates, 4 and 7 percent.

Currently, many assets are eligible for an investment tax credit (ITC) of up to 10 percent. Gross income taxes would not include these credits. Current law also allows depreciation deductions based on schedules that are considerably faster than actual economic depreciation. Gross income taxes would not include these deductions. Both of these changes in the tax laws would, by themselves, increase the cost of capital and lead to smaller investment incentives. Offsetting these changes would be tax rate reductions. The result on the effective marginal tax rate on capital depends on the interactions among these different influences.

The calculations suggest that the loss of depreciation deductions is the most important factor for capital investment, and that the overall effect of a gross income tax would be to raise the effective marginal tax rate on capital in the economy. Thus, a gross income tax would be a disincentive to investment compared to the current tax structure.

The effect on the marginal tax rate is constrained, however, because many factors which influence the capital tax rate would not be directly affected by the adoption of a Federal gross income tax. Most important is that state and local government capital taxes, including personal and corporate income taxes and property taxes, would not necessarily be changed if the national government were to switch to a gross income tax system. A large portion of the overall effective marginal tax rate on capital results from these subnational government taxes. A national government gross income tax would, however, exacerbate the effect of capital taxation by state and local governments because the gross income tax would not include deductions for state and local income and property taxes, as are currently allowed. Because these deductions are eliminated, there is an increase in the degree to which state and local government capital taxes contribute to the overall effective marginal tax rate on capital.

Another reason why the increase in effective capital tax rates brought on by a gross income tax is not as large as one might expect is that the calculations assume that the imputed rent from owner-occupied housing, which accounts for approximately one-third of the capital stock, will continue not to be taxed. If these rents were taxed under a gross income tax (as a pure gross income tax requires), the calculations would show even larger increases in the effective tax rate on capital in the economy.

The model used for these calculations generates detailed estimates of the effective capital tax rate for 38 different asset types, 18 industrial sectors, and various aggregates. Because the calculations are simply to be illustrative, given the uncertainty about the exact structure of a potential gross income tax, only the more aggregated results are reported here. These results from the calculations are shown in Table 6.6.

In Table 6.6, removal of the investment tax credit and depreciation deductions is combined with the tax rate reduction that also characterizes gross income tax proposals. Reduction of the corporate income tax rate does serve to mitigate somewhat the effects of the removal of the ITC and depreciation deductions, but a fairly substantial increase in capital tax rates still occurs. Calculations are reported for two alternative corporate tax rates, a 6 percent rate (which as previously shown would be possible only if the base broadening were very great indeed) and a 12 percent rate. In either case, the overall effective marginal tax rate on capital is increased substantially over that which results from the 1985 law, from 26.3 percent up to 35 percent or more. It is important to repeat that the total corporate tax rate applied in these calculations is greater than the gross income tax rate of 6 or 12 percent because of subnational government corporate taxes and because there are no deductions for depreciation.2/

In the last two columns of Table 6.6, the reduction in personal income tax rates that is included in general gross income tax proposals is added. Under current law, the effective personal tax rates on dividends, interest, capital gains, housing, and returns from noncorporate businesses are all different from each other. While it seems likely that any adopted gross income tax would also include some preferential treatment of some investments, it is impossible to predict the extent and form of such differentiation. Therefore it is assumed that the national gross income tax rates of 6 or 12 percent apply to all types of personal investment income. As with corporate taxes, however, state and local governments also impose personal income taxes which would no longer be deductible under a national gross income tax. Six percentage points are added to the personal gross income tax rate to reflect nondeductible state and local taxes.

The addition of a reduced personal gross income tax to the business gross income tax does reduce the effective marginal tax rates on capital, although they remain above those from current law. If both the national business and personal gross

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2/ Because deductibility of state taxes is not allowed under a gross income tax, the state tax rate is merely added to the national government rate. Following Fullerton (1985), 6.6 percentage points are added to represent the average amount of state tax. The implicit assumption is that states follow the Federal tax base.

income tax rates are 6 percent, the overall effective marginal tax rate on capital is 32.1 percent, compared to 26.3 percent under current law. If, as seems more likely, the national gross income tax rates are 12 percent, the overall effective marginal tax rate on capital is 37.1 percent, about 41 percent greater than under current law. In fact, adding a 12 percent personal gross income tax (rather than the current individual income tax) to a 12 percent business gross income tax actually increases overall capital tax rates. This occurs because the capital gains tax rate under current law is lower than under the assumed pure gross income tax. Even if the tax rate on capital gains is zero under the gross income tax, the removal of the ITC and depreciation deductions would still yield an overall increase in effective capital capital tax rates compared with current law.

It is interesting to note in Table 6.6 that, under current law, the overall effective marginal tax rate on capital in the corporate sector is less than the statutory corporate tax rate. On the other hand, the effective marginal tax rate on corporate capital would exceed the statutory corporate rate if a gross income tax were adopted. The reason for this difference is the disallowance of even economic depreciation under the gross income tax plans.

Calculations of the effective marginal tax rates on structures and equipment, both in the corporate and noncorporate sectors, are separately reported in Table 6.6. It is clear that, under current law, the generous investment incentives for equipment actually lead to a net subsidy for investment in equipment, i.e., the effective marginal tax rates are negative. This means that there is a very strong incentive to substitute equipment for structures under current law, because the effective rates on structures are substantially positive. The gross income tax plans considered would raise the tax rates on structures by only a few percentage points. The elimination of depreciation deductions and the investment tax credit would, however, have a substantial effect on equipment. Under the gross income tax plans, not only would equipment no longer be subsidized, but it would be taxed at higher rates than those at which structures would be taxed. The incentive to substitute equipment for structures would be reversed.

The sensitivity of these results to the assumptions about the type of arbitrage and the rate of inflation have also been investigated. Those results indicate that the model is reasonably robust with respect to these assumptions and that the qualitative picture of the effect of gross income taxes on capital tax rates is preserved.

2. Saving Incentives

A key feature of a pure gross income tax that would affect the savings incentives for individuals is the elimination of tax-preferred savings vehicles, the best known of which are Individual Retirement Accounts (IRAs). These have grown substantially in recent years despite the fact that they are rather illiquid investments for many savers and that contributions are tax deductible only up to limits of $4,000 for a working married couple and $2,000 for a single person. Because of these limits, IRAs may not offer a marginal saving incentive to some. Not all of the growth of IRAs reflects new saving, because individuals can transfer preexisting assets (earlier saving) into IRAs. Despite these difficulties, discussed at length in Feldstein and Feenberg (1983), IRAs do offer a marginal saving incentive to millions of taxpayers, with the value of the incentive depending on the saver's marginal tax rate.

The amount of saving reduction that would be caused by the removal of the IRA option under a gross income tax depends on how responsive saving behavior is to net rates of return. The extent of responsiveness is given by the saving elasticity. This is a parameter which economists have not succeeded in estimating with any precision and about which there is some controversy. The consensus in the 1950s that the saving elasticity was near zero has more recently been replaced by the view that the elasticity is positive but small (see, for example, Denison, 1958, and Howrey and Hymans, 1980). Even if the saving elasticity is zero, however, it does not follow that removal of savings incentives will have no effect on capital formation (see Feldstein, 1978). Saving represents dollar expenditure on future consumption. If the price of saving rises, then less future consumption may be bought even when the saving elasticity is zero because the same number of dollars saved will buy fewer capital investments if the price has risen. Conversely, those dollars will buy more capital investment if the price of saving is reduced, for example by tax-preferred savings vehicles.

Ballard, Fullerton, Shoven, and Whalley (1985) report that universal consumption tax treatment of all financial investments could lead to a 20 percent long-run increase in investment, even if the saving elasticity is zero. On that basis, if a pure income tax with no special treatment of savings were substituted for the current structure, a reduction in capital formation of well over 10 percent could be expected. The reduction in capital formation would make consumers in the economy worse off in the long run, even though the removal of tax deductions for savers generates revenue which can be used to reduce general tax rates.

Table 6.1

Potential Business Gross Income Tax Bases, 1984

Economic Activity	Amount (in billions)
Gross National Product	$3.662.8
Minus: Exempt Organizations	
Government Purchases of Goods and Services	747.4
Nonprofit Organizations	115.4
Potential Base A	$2.800.0
Minus: Administrative Exemptions	
Housing	397.9
Foreign Travel by U. S. Residents	11.2
Potential Base B	$2.390.9
Minus: Policy Exemptions	
Net Exports of Goods and Services	-64.2
Food Purchased for Off-Premise Consumption	311.0
Potential Base C	$2.144.1
Minus: Other Possible Exemptions	
Medical - Hospitals and Health Insurance	124.1
Medical - Drug Preparations	23.6
Medical - Physicians and Dentists	91.1
Financial Services Without Charges	55.8
Potential Base D	$1.849.5

Source: Survey of Current Business. July 1985.

Table 6.2

Potential Individual Gross Income Tax Bases, 1984

Economic Activity	Amount (in billions)
Personal Income	$3,012.1
Plus: Personal Contributions for Social Insurance	132.5
Capital Gains 1/	93.2
Taxable Private Pensions 2/	69.8
Inheritances 3/	65.7
Gifts 4/	23.4
Potential Base A	$3,396.7
Minus: Personal Interest	433.7
Potential Base B	$2,963.0
Minus: Government Transfer Payments to Persons	399.4
Potential Base C	$2,563.6

1/ Net long-term and short-term capital gains after carryover for 1982: Statistics of Income, Individual Income Tax Returns for 1982.

2/ For 1983.

3/ Estimated from estate tax returns for 1983. The 1983 returns are for estates greater than $300,000. A more detailed distribution of amount of estates by size for 1976 is reported for estates greater than $60,000. A $300,000 estate in 1983 is roughly equivalent to a $150,000 estate in 1976, given the fact that estates increase proportional to personal income (Laitner, 1982). In 1976, estates of less than $150,000 comprised about 30 percent of the total amount of estates of more than $150,000. Thus the reported $50.4 billion of estates for 1983 is increased to $65 billion.

4/ Estimated as 1 percent of personal consumption expenditures.

Sources: Survey of Current Business, July 1985; "Estate Tax Returns, 1983," SOI Bulletin, Fall 1984; Statistics of Income, Individual Income Tax Returns for 1983; Pechman, 1983, Table D-21.

Table 6.3

Gross Income Tax (GIT) Rates Required to Substitute for Individual and Corporate Income Taxes for Alternative GIT Bases. Fiscal Year 1985 1/

Individual GIT Base	Business GIT Base A	B	C	D
A	6.66%	7.14%	7.45%	7.87%
B	7.17%	7.71%	8.09%	8.58%
C	7.70%	8.34%	8.77%	9.36%

1/ If these rates are applied both to the individual and business GIT bases for 1984. revenue of $412.8 billion is generated. which equals the sum of individual and corporate income tax revenues for fiscal year 1985.

Source· Tables 6.1 and 6.2

Table 6.4

Distribution of Tax Liabilities Under Current Law and Various Revenue-Neutral Flat-Rate Taxes. 1986

Economic Income	Current Law Tax 1986 1/	Taxes With Flat Rate On:			
		Current Law Base 2/	Current Law Base. No ZBA 3/	Current Law Base. No ZBA or Personal Exemptions 4/	Gross Income. No ZBA or Personal Exemptions 5/
	(A)	(B)	(C)	(D)	(E)
			(In Billions)		
Under $10.000	$1.6	$2.3	$4.0	$5.6	$12.9
10.000-15.000	4.5	7.5	10.2	12.2	16.5
15.000-20.000	8.2	12.7	15.3	17.2	19.5
20.000-30.000	29.6	41.6	45.4	47.8	47.4
30.000-50.000	78.2	100.7	102.3	103.4	95.2
50.000-100.000	109.3	111.3	114.4	111.4	103.4
100.000-200.000	48.9	36.7	33.3	30.8	30.5
200.000 +	76.5	36.9	31.8	28.3	31.3
Total	$356.8	$356.8	$356.8	$356.8	$356.8

1/ 1985. Midsession Review receipts.

2/ Taxable income minus zero-bracket amounts.

3/ Taxable income.

4/ Adjusted gross income minus excess itemized deductions.

5/ Personal income (as defined in NIPA) minus: imputed amounts. unreported income identified by IRS audits. income-tested transfer payments: plus: nominal economic depreciation. capital gains. and pension receipts.

Table 6.5

VALUE-ADDED TAX AS SHARE OF BUSINESS RECEIPTS AND NET INCOME BY INDUSTRY CLASS, 1980[1]

(per 1% tax rate)

Industry Class	1% VAT (billions)	VAT as percent of Business Receipts	VAT as percent of of Net Income[2]	VAT Liability Per Firm
Agriculture, Forestry and Fishing	$0.61	0.36	25.2	$ 175
Mining	0.38	0.20	9.9	2,095
Construction	1.07	0.33	7.5	758
Manufacturing	5.26	0.23	4.1	9,247
Lumber and Wood Products	0.15	0.27	10.8	1,607
Printing and Publishing	0.28	0.39	5.1	2,862
Machinery, Except Electrical	0.68	0.42	4.9	11,310
Other	4.15	0.20	3.9	13,069
Transportation, Communications and Public Utilities	1.71	0.20	7.7	2,997
Wholesale Trade	1.37	0.12	4.4	2,130
Retail Trade	1.79	0.18	9.5	651
Finance, Insurance, and Real Estate	2.91	0.83	8.2	1,335
Services	2.78	0.66	5.9	582
Hotels and Other Lodging	0.14	0.52	3.9	1,489
Personal Services	0.13	0.52	3.9	161
Auto Repair, Services and Garages	0.11	0.28	6.5	340
Business Services	0.53	0.53	7.9	485
Amusement and Recreation Services	0.09	0.25	9.7	228
Professional and Other	1.78	0.93	5.2	827
All Industries	17.88	0.27	5.9	1.065

[1] The data used in this table to represent value added are national income without the capital consumption adjustment which corresponds closely to the gross product variant of the VAT.

[2] Includes firms that report negative income.

SOURCE: *Survey of Current Business*, U.S. Department of Commerce, Bureau of Economic Analysis, July 1983, p. 69. *Partnership Returns*, Statistics of Income, 1980, Internal Revenue Service, Table 1, *Sole Proprietorship Returns*, Statistics of Income, 1979–1980, Internal Revenue Service, Table 10; *Corporation Income Tax Returns*, Statistics of Income, 1980, Internal Revenue Service, Table 2.

Source: Reprinted from ACIR. Strengthening the Federal Revenue System: Implications for State and Local Taxing and Borrowing. 1984. Table 4-4.

Table 6.6

Effective Marginal Total Tax Rates on Income from Capital for Alternative Gross income Tax Rates 1/

(Marginal effective total tax rates show the combined impact of corporate taxes. personal taxes, and property taxes.)

Sector	1985 Law	Investment Tax Credit and Depreciation Deductions Removed			
		Personal Rates Unchanged but Corporate Rates of:		Personal and Corporate Rates of:	
		6%	12%	6%	12%
Corporate Sector	31.1%	39.0%	43.8%	41.2%	50.8%
Equipment	-18.3%	45.7%	53.4%	48.6%	59.7%
Structures	37.9%	38.6%	42.8%	40.7%	49.9%
Noncorporate Sector	30.7%	40.9% 2/		30.2%	34.9%
Equipment	-10.1%	60.2%		41.2%	50.5%
Structures	28.1%	41.4%		29.5%	34.5%
Owner-Occupied Housing	17.2%	20.5%		24.2%	23.0%
All Sectors	26.3%	35.0%	36.5%	32.1%	37.1%

1/ These calculations assume firm arbitrage (described in the text) and an inflation rate of 4 percent.

2/ Corporate rate changes do not affect the marginal effective total tax rate in the noncorporate or housing sector (except very slightly through changes in the equilibrium interest rate).

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